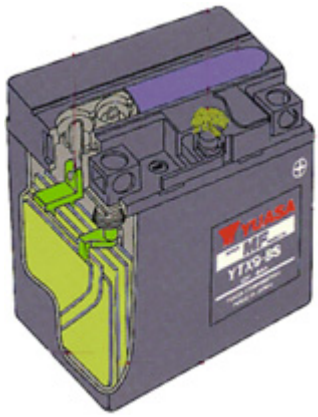
YUASA
MC-batterier

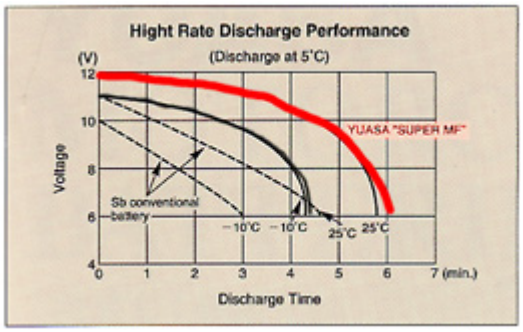
BATTERI TYPER

6 og 12 volt almindelige batterier er ikke så almindelige som det lyder. De yder en stor strøm styrke til din motorcykel, scooter eller knallert. Denne almindelige type er speciel til dem som ikke har selvstarter. Den effekt som ydes i start øjeblikket (CCA) er mindre en Yumicron batterierne(YB).

YB 12 volt batterierne har en høj effekt i start øjeblikket (CCA) og er derfor yderst velegnet til motorcykler og scootere med selvstarter. Disse Yumicron batterier(YB) har Sulfat Stop. Dette betyder at den "urolige" syre bliver stabiliseret og holdbarheden og strømstyrken forbedres.

YTX/YT 12 volt batterier er "vedligeholdels frie" batterier. Vedligeholdels frie batterier er forseglede og skal derfor ikke efterses for batteri syre. De yder en fantastisk strømstyrke i start øjeblikket (CCA) og strømstyrkens holdbarhed er længere end andre typer batterier. Da batteriet er forseglet, vil der vil aldrig løbe syre ud af batteriet. Dette er bl.a. med til at beskytte motorcyklen/scooteren hvis uheldet er ude, men også naturen.





På grund af den specielle batteri konstruktion, skal denne type batterier oplades på en speciel måde. En speciel oplader, f.eks **Optimate**, skal bruges for at batteriet ikke "koger" eller eksplodere. En motorcykel/scooter som er monteret med denne type batteri, har et lade anlæg som er tilpasset dette. Brug derfor altid kun den samme type igen, hvis du skal skifte dit udtjente batteri.

GS YUASA

GS YUASA APPLICATIONS & SPECIFICATIONS DATA BOOK 2005-2006

GS YUASA

TABLE OF CONTENTS

Cross Reference **2**

Battery Specifications **3-9**

Conventional 3-4

Yumicron 5-6

Super MF 7-8

Battery Terminals 9

Motorcycle & Scooter Battery Application **10-35**

Honda Application 10-14

Kawasaki Application 14-17

Suzuki Application 17-20

Yamaha Application 20-24

European Application 24-34

American Application 34

Asian Application 34-35

Utility Vehicle Application **35**

All Terrain Vehicle Application **36-37**

Personal Watercraft Application **37-38**

Snowmobile Application **38**

YUASA'S NEW HIGH PERFORMANCE MAINTENANCE FREE VRLA BATTERIES... STARTING POWER FROM THE BIGGEST NAME IN BATTERIES

CROSS REFERENCE

Yuasa	GS	GS-ZTONG YEE
Premium Sealed Maintenance Free		
YT4B-BS	GT4B-5	-
YTR4A-BS	GTR4A-5	-
YTX4L-BS	GTH4L-BS	GT4L-BS
YTX5L-BS	GTX5L-BS	GTX5L-BS
YTX7A-BS	GTX7A-BS	GTX-7A-BS
YTX7L-BS	GTX7L-BS	-
YT7B-BS	GT7B-4	-
YTX9-BS	GTX9-BS	GTX9-BS
YT9B-4	GT9B-4	-
YTX12-BS	GTX12-BS	GTX12-BS
YT12B-BS	GT12B-4	-
YTX14-BS	-	GTX14-BS
YTX14L-BS	-	-
YT14B-4	GT14B-4	-
YTX14AH-BS	-	-
YTX14AHL-BS	-	-
YTX15L-BS	-	-
YTX20-BS	-	GT16-BS
YTX20L-BS	-	GT16L-BS
YTX24HL-BS	-	GTX18L-BS
YTX20L-BS	-	GTX20L-BS
YIX30L	-	-
Premium		
YB2.5L-C	GM2.5A-3C-2	CB2.5L-C
YB2.5L-C-1	-	CB2.5L-C-1
YB3L-A	GM3-3A	CB3L-A
YB3L-B	GM3-3B	CB3L-B
YB4L-A	-	CB4L-A
YB4L-B	GM4-3B	CB4L-B
YB5L-B	GM5Z-3B	CB5L-B
YB7-A	GM7Z-4A	CB7-A
YB7C-A	GM7CZ-3D	-
YB7L-B	GM7-3B-1	CB7L-B
YB9A-A	-	CB9A-A
YB9L-A2	GM9Z-3A-1	CB9L-A2
YB9-B	GM9Z-4B	CB9-B
YB9L-B	GM9Z-3B	CB9L-B
YB10A-A2	-	CB10A-A
YB10L-A2	GM10Z-3A	CB10L-A2
YB10L-B	GM10Z-3B	CB10L-B
YB10L-B2	GM10Z-3B-2	CB10L-B2
YB12A-A	GM12AZ-4A-1	CB12A-A
YB12AL-A	-	CB12AL-A
YB12A-B	-	-
YB12B-B2	GM12B-4B	CB12B-B2
YB12C-A	GM12CZ-4A-2	-
YB14-A2	GM14Z-4A	CB14-A2
YB14A-A1	-	CB14A-A
YB14A-A2	GM14AZ-4A-1	CB14A-A2
YB14L-A1	-	CB14L-A1
YB14L-A2	GM14Z-3A	CB14L-A2
YB14L-B2	GM14Z-3B	CB14L-B2
YB14-B2	GM14Z-4B	CB14-B2
SYB14L-A2	GM14Z-3A	SCB14-LA2
SYB14L-B2	-	SCB14-LB2
YB16AL-A2	GM16A-3A	CB16AL-A2
HYB16A-AB	-	HCB16A-A
YB16-B	GM16Z-4B	CB16-B
YB16L-B	GM16Z-3B	CB16L-B
YB16-B-CX	-	GT16-BS
YB16HL-A-CX	-	GT16L-BS
YB16B-A	GM16B-4A	-
YB16B-A1	-	-
YB16C-B	-	-
YB16CL-B	GB16CL-B	CB16CL-B
SYB16L-B	-	SCB16L-B
YB18-A	-	CB18-A
YB18L-A	GM18A-3A	CB18L-A
Y50-N18A-A	-	-
Y50-N18L-A	GM18Z-3A	C50-N18L-A3
Y50-N18L-A3	-	C50-N18L-A3
Y60-N24-A	-	C60-N24L-A
Y60-N24AL-B	-	-

Yuasa	GS	GS-ZTONG YEE
Conventional 12 Volt		
12N5-3B	-	12N5-3B
12NN5-4B	-	12N5-4B
12N5.5-3B	12N5.5-3B	12N5.5-3B
12N5.5-4A	-	12N5.5-4A
12N5.5-4B	-	12N5.5-4B
12N5.5A-3B	-	12N5.5A-3B
12N7-3B	-	12N7-3B
12N7-4A	-	12N7-4A
12N7-4B	-	12N7-4B
12N7D-3B	12N7D-3B	12N7D-3B
12N9-3A	-	12N9-3A
12N9-3A-1	-	12N9-3A-1
12N9-3B	-	12N9-3B
12N9-4B-1	-	12N9-4B-1
12N10-3A	-	12N10-3A
12N10-3A-1	-	12N10-3A-1
12N10-3A-2	-	12N10-3A-2
12N10-3B	-	12N10-3B
12N11-3A-1	-	12N11-3A-1
12N12-3B	-	12N12-3B
12N12A-4A-1	-	12N12A-4A-1
12N14-3A	-	12N14-3A
12N16-3B	-	12N16-3B
12N18-3	-	12N18-3
12N24-3A	-	12N24-3A
12N24-3	-	12N24-3
YHD-12	-	CHD4-12
YHD-12H	-	YHD-12H
YHD-30	-	-
Conventional 6 Volt		
6N2-2A	6N2-2A	6N2-2A
6N2-2A-1	-	6N2-2A-1
6N2-2A-3	-	6N2-2A-3
6N2-2A-4	6N2-2A-4	6N2-2A-4
6N2-2A-7	6N2-2A-7	
6N2-2A-8	6N2-2A-8	6N2-2A-8
6N2-2A-9	6N2-2A-9	
6N2A-2C	6N2A-2C	6N2A-2C
6N2A-2C-3	-	6N2A-2C-3
6N2A-2C-4	6N2A-2C-4	-
6N4-2A	6N4-2A	6N4-2A
6N4-2A-2	6N4-2A-2	-
6N4-2A-3	-	6N4-2A-3
6N4-2A-4	-	6N4-2A-4
6N4-2A-5	-	6N4-2A-5
6N4-2A-7	6N4-2A-7	-
6N4-2A-8	-	-
6N4-2A-9	6N4-2A-9	-
6N4A-4D	-	6N4A-4D
6N4B-2A	6N4B-2A	6N4B-2A
6N4B-2A-3	6N4B-2A-3	6N4B-2A-3
6N4B-2A-5	-	6N4B-2A-5
6N4C-1B	-	6N4C-1B
6N5.5-1D	-	6N5.5-1D
6N5.5-1D-1	-	6N5.5-1D-1
6N5.5-1D-2	-	-
6N6-1B	-	6N6-1B
6N6-3B	-	6N6-3B
6N6-3B-1	6N6-3B-1	6N6-3B-1
6N6-1D	-	6N6-1D
6N6-1D-2	-	6N6-1D-2
B39-6	-	-
6N11-2D	-	6N11-2D
6N11A-1B	-	6N11A-1B
6N11A-3A	-	-
6N12-4A	-	6N12-4A
B54-6	-	-
6N12A-2D	-	6N12A-2D
B38-6	-	-
6YB8L-B	6GM8-3B	-
6YB11-2D	-	-
H-2	-	-

CONVENTIONAL

- **Highest Engineering Standards**
- **Highest Quality Materials**
- **Highest Quality Construction**
- **Widest Model Range**
- **Excellent Warranty Coverage**

SPECIFICATIONS

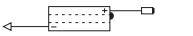
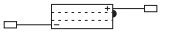
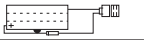
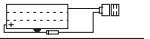
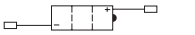
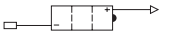
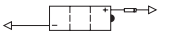
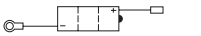
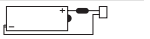
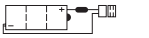
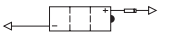
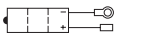
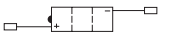
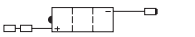
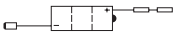
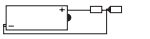
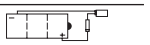
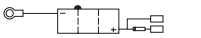
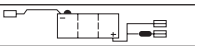
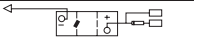
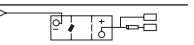
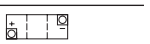
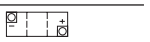
*The CCA(Cold Cranking Amps)rating is for reference only. The CCA rating is theoretically calculated value. Actual performance may vary due to test conditions.

[12-VOLT]

Type	Capacity Ah/10HR	*CCA (A)	Max.Dimensions (mm)			Weight with Acid (kg)	Acid Volume (liter)	Regular Charge Current (amp.)	Assembly Figure	Similar Spec. Most Recommended
			L	W	H					
⋆12N5-3B	5	39	121	61	131	2.0	0.4	0.5		YB5L-B
⋆12N5-4B	5	39	121	61	131	2.0	0.4	0.5		-
⋆12N5.5-3B	5.5	60	138	61	131	2.5	0.4	0.6		-
⋆12N5.5-4A	5.5	60	138	61	131	2.5	0.4	0.6		-
⋆12N5.5-4B	5.5	60	138	61	131	2.5	0.4	0.6		-
⋆12N5.5A-3B	5.5	58	104	91	115	2.4	0.5	0.6		-
⋆12N7-3B	7	74	137	76	135	3.0	0.5	0.7		YB7L-B
⋆12N7-4A	7	74	137	76	135	3.0	0.5	0.7		YB7-A
⋆12N7-4B	7	74	137	76	135	3.0	0.5	0.7		-
⋆12N7B-3A	7	74	151	61	131	2.9	0.5	0.7		-
⋆12N7D-3B	7	74	134	76	150	2.9	0.6	0.7		-
⋆12N9-3A	9	85	138	77	141	3.3	0.6	0.9		-
⋆12N9-3B	9	85	138	77	141	3.2	0.6	0.9		YB9L-B
⋆12N9-4B-1	9	85	138	77	141	3.2	0.6	0.9		YB9-B
⋆12N10-3A	10	103	136	91	146	3.9	0.8	1.0		-
⋆12N10-3A-2	10	103	136	91	146	3.9	0.8	1.0		YB10L-A2
⋆12N10-3B	10	103	136	91	146	3.9	0.8	1.0		YB10L-B
⋆12N11-3A-1	11	128	136	91	156	3.6	0.8	1.1		-
⋆12N11-3B	11	128	136	91	156	3.6	0.8	1.1		-
⋆12N12-3B	12	120	202	76	134	4.4	0.8	1.2		-
⋆12N12A-4A-1	12	113	136	82	162	3.7	0.7	1.2		YB12A-A
⋆12N14-3A	14	128	136	91	168	4.5	0.8	1.4		YB14L-A2
⋆12N18-3	18	190	206	91	164	6.2	1.2	1.8		-
⋆12N24-3A	24	200	186	126	177	7.9	1.8	2.4		-
DIN Type Motorcycle Battery for European Vehicles										
⋆51913	19(20HR)	■100	186	82	171	5.6	1.0	1.9		-
⋆51814	18(20HR)	■100	186	82	171	5.6	1.0	1.9		-
⋆52515	25(20HR)	■130	186	130	171	8.4	1.8	2.5		-
⋆53030	30(20HR)	■180	186	130	171	9.4	1.6	3.0		-

⋆ : Supplied from Yuasa Group affiliates. ■ : The values referred here are based on DIN standard. (Reference only)

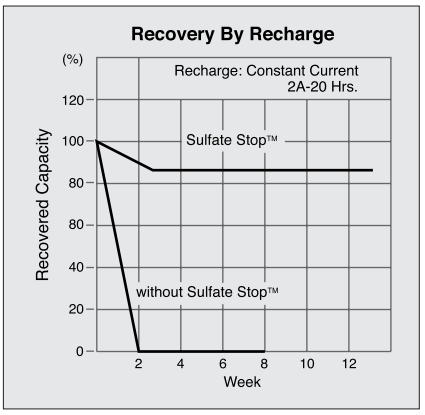
[6-VOLT]

Type	Capacity Ah/10HR	Max.Dimensions (mm)			Weight with Acid (kg)	Acid Volume (liter)	Regular Charge Current (amp.)	Assembly Figure
		L	W	H				
⋆6N2-2A	2	70	47	96	0.5	0.1	0.2	
⋆6N2-2A-1	2	70	47	96	0.5	0.1	0.2	
⋆6N2-2A-3	2	70	47	96	0.5	0.1	0.2	
⋆6N2-2A-4	2	70	47	96	0.5	0.1	0.2	
⋆6N2-2A-8	2	70	47	96	0.5	0.1	0.2	
⋆6N2-2D	2	70	47	103	0.6	0.1	0.2	
⋆6N2A-2C	2	70	47	106	0.5	0.1	0.2	
⋆6N2A-2C-3	2	70	47	106	0.5	0.1	0.2	
⋆6N2A-2C-4	2	70	47	106	0.5	0.1	0.2	
⋆6N4-2A	4	71	71	96	0.8	0.2	0.4	
⋆6N4-2A-3	4	71	71	96	0.8	0.2	0.4	
⋆6N4-2A-4	4	71	71	96	0.8	0.2	0.4	
⋆6N4-2A-5	4	71	71	96	0.8	0.2	0.4	
⋆6N4-2A-6	4	71	71	96	0.8	0.2	0.4	
⋆6N4-2A-7	4	71	71	96	0.8	0.2	0.4	
⋆6N4-2A-8	4	71	71	96	0.8	0.2	0.4	
⋆6N4-2A-12	4	71	71	96	0.8	0.2	0.4	
⋆6N4A-4D	4	57	61	131	1.0	0.2	0.4	
⋆6N4B-2A	4	102	48	96	1.0	0.2	0.4	
⋆6N4B-2A-3	4	102	48	96	1.0	0.2	0.4	
⋆6N4B-2A-4	4	102	48	96	1.0	0.2	0.4	
⋆6N4B-2A-5	4	102	48	96	1.0	0.2	0.4	
⋆6N4C-1B	4	71	71	105	0.8	0.2	0.4	
⋆6N5.5-1D	5.5	99	70	100	1.1	0.3	0.6	
⋆6N5.5-1D-1	5.5	99	70	100	1.1	0.3	0.6	
⋆6N6-1B	6	99	57	111	1.2	0.3	0.6	
⋆6N6-1B-1	6	99	57	111	1.2	0.3	0.6	
⋆6N6-3B	6	99	57	111	1.3	0.3	0.6	
⋆6N6-3B-1	6	99	57	111	1.3	0.3	0.6	
⋆6N6-1D	6	99	57	111	1.2	0.3	0.6	
⋆6N6-1D-2	6	99	57	111	1.2	0.3	0.6	
⋆B39-6	7	126	48	126	1.7	0.3	0.7	
⋆B49-6	8	91	83	161	2.1	0.5	0.8	
⋆6N11-2D	11	150	70	101	2.0	0.4	1.1	
⋆6N11A-1B	11	122	62	131	2.1	0.4	1.1	
⋆6N11A-3A	11	122	62	131	2.1	0.4	1.1	
⋆6N11A-4	11	122	62	131	2.1	0.4	1.1	
⋆6N12-4A	12	170	55	139	2.6	0.5	1.2	
⋆B54-6	12	156	57	116	2.3	0.5	1.2	
⋆6N12A-2D	12	156	57	118	2.3	0.45	1.2	
⋆B38-6A	13	119	83	161	2.9	0.62	1.3	

⋆ : Supplied from Yuasa Group affiliates.

YUMICRON

FROM our research shows that 95% of all battery troubles arise from the battery being left for a long the period at a discharged condition. If a battery is left at the discharged condition, a crystal-like material is formed on battery plates' surface which cause a higher resistance to conductivity.
This phenomenon is called "sulfation".
Once a battery has become sulfated it is very difficult to restore the full charge and the battery has to be replaced with a new one.
Yuasa "SULFATE STOP" is the chemical formula incorporated that drastically reduces the sulfate crystal buildup on battery plates' surface and thus tremendously prolongs the life expectancy of the battery and minimizes battery expenses.

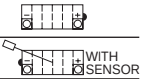
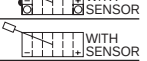
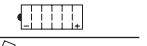


SPECIFICATIONS

*The CCA(Cold Cranking Amps)rating is for reference only. The CCA rating is theoretically calculated value. Actual performance may vary due to test conditions.

Type	Capacity Ah/10HR	*CCA (A)	Max.Dimensions (mm)			Weight with Acid (kg)	Acid Volume (liter)	Regular Charge Current (amp.)	Assembly Figure
			L	W	H				
(6-VOLT)									
★●6YB8L-B	8	-	121	71	96	1.6	0.31	0.8	
(12-VOLT)									
★YB2.5L-C	2.5	19	81	71	106	1.0	0.24	0.3	100±0
★YB2.5L-C-1	2.5	19	81	71	106	1.0	0.24	0.3	
★YB2.5L-C-2	2.5	19	81	71	106	1.0	0.24	0.3	60±0
★YB3L-A	3	32	99	57	111	1.3	0.24	0.3	
★YB3L-B	3	32	99	57	111	1.3	0.24	0.3	
★YB4L-A	4	56	121	71	93	1.5	0.3	0.4	
★YB4L-B	4	56	121	71	93	1.5	0.3	0.4	
★YB5L-B	5	65	121	61	131	2.0	0.36	0.5	
★YB7-A	8	124	137	76	135	3.0	0.6	0.8	
★●YB7C-A	8	124	130	90	114	3.0	0.6	0.8	
★YB7L-B	8	124	137	76	135	2.9	0.6	0.8	
★YB9A-A	9	124	138	77	157	3.1	0.6	0.9	
★●YB9L-A2	9	124	135	75	139	3.1	0.6	0.9	
★YB9-B	9	130	138	77	141	3.1	0.6	0.9	
★YB9L-B	9	130	138	77	141	3.1	0.6	0.9	
★YB10A-A2	12	160	136	91	156	4.0	0.8	1.2	

★ : Supplied from Yuasa Group affiliates. ● : Marked items are not sulfate stop.

Type	Capacity Ah/10HR	*CCA (A)	Max.Dimensions (mm)			Weight with Acid (kg)	Acid Volume (liter)	Regular Charge Current (amp.)	Assembly Figure
			L	W	H				
★YB10L-A2	12	160	136	91	146	4.2	0.8	1.2	
★YB10L-B	12	160	136	91	146	4.0	0.8	1.2	
★YB10L-B2	11	160	136	91	146	4.0	0.8	1.1	
★SYB10L-A2	12	160	136	91	146	4.0	0.8	1.2	WITH SENSOR
★YB12A-A	12	165	136	82	162	4.1	0.8	1.2	
★YB12AL-A	12	165	136	82	162	4.0	0.75	1.2	
★YB12AL-A2	12	165	136	82	162	4.0	0.75	1.2	
★YB12A-AK	10	165	136	82	162	3.5	0.8	1.0	WITH SENSOR
★YB12A-B	12	165	136	82	162	4.0	0.75	1.2	
★YB12B-B2	12	165	161	91	131	4.0	0.8	1.2	
★●YB12C-A	12	165	136	82	176	4.3	0.8	1.2	
★YB14-A2	14	190	136	91	168	4.6	0.9	1.4	
★YB14-B2	14	190	136	91	168	4.6	0.9	1.4	
★YB14A-A1	14	190	136	91	178	4.5	0.9	1.4	
★YB14A-A2	14	190	136	91	178	4.5	0.9	1.4	
★YB14L-A	14	190	136	91	168	4.6	0.9	1.4	
★YB14L-A1	14	190	136	91	168	4.6	0.9	1.4	
★YB14L-A2	14	190	136	91	168	4.6	0.9	1.4	
★YB14L-B2	14	190	136	91	168	4.6	0.9	1.4	
★SYB14L-A2	14	190	136	91	168	4.6	0.9	1.4	 WITH SENSOR
★SYB14L-B2	14	190	136	91	168	4.6	0.9	1.4	 WITH SENSOR
YB16AL-A2	16	200	207	72	164	5.3	1.1	1.6	
YB16B-A	16	207	161	91	162	5.1	1.0	1.6	
YB16B-A1	16	207	161	91	162	5.1	1.0	1.6	
★HYB16A-AB	16	210	152	92	182	5.0	0.9	1.6	
YB18-A	18	235	181	92	164	5.8	1.2	1.8	
YB18L-A	18	235	181	92	164	5.8	1.2	1.8	
YB16-B	19	240	176	101	156	6.3	1.2	1.9	
YB16L-B	19	240	176	101	156	6.3	1.2	1.9	
★△YB16-B-CX	19	255	176	101	156	6.3	1.2	1.9	
★△YB16HL-A-CX	19	255	176	101	156	6.3	1.2	1.9	
★YB16CL-B	19	240	176	101	175	6.1	1.2	1.9	
Y50-N18A-A	20	260	206	91	177	6.5	1.5	2.0	
Y50-N18L-A	20	260	206	91	163	7.4	1.4	2.0	
★Y50-N18L-A3	20	260	206	91	166	7.4	1.4	2.0	
SY50-N18L-AT	20	260	206	91	163	6.5	1.4	2.0	 WITH SENSOR
Y60-N24-A	28	300	186	126	178	8.6	1.7	2.8	
Y60-N24L-A	28	300	186	126	178	8.6	1.7	2.8	
Y60-N24AL-B	28	300	186	126	176	8.6	1.7	2.8	
YB30L-B	30	300	168	132	176	8.5	1.7	3.0	
★YHD-12	32	240	207	132	167	8.3	2.2	3.2	

★ : Supplied from Yuasa Group affiliates. ● : Marked items are not sulfate stop.
△ : CX Battery is designed for longer battery life, lower maintenance and more cranking power. USA origin.

SUPER MF

The unique gas recombination system remarkably prolongs battery life in addition to stronger cranking performance.
Yuasa SUPER MF BATTERY was awarded a special prize, as the world's first Maintenance-Free motorcycle battery, at the 1985 International Battery Competition sponsored by Battery Council International held in Toronto, Canada.

SPECIFICATIONS

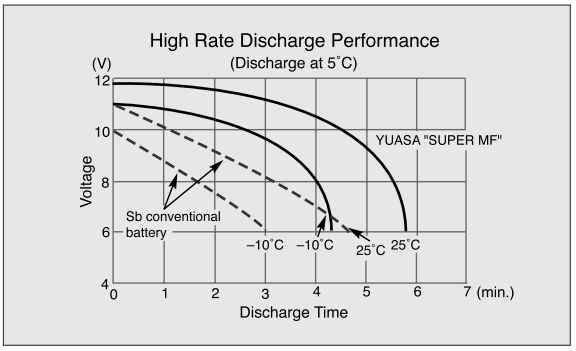
*The CCA(Cold Cranking Amps)rating is for reference only. The CCA rating is theoretically calculated value. Actual performance may vary due to test conditions.

Type	Capacity Ah/10HR	*CCA (A)	Max.Dimensions (mm)			Weight with Acid (kg)	Acid Volume (liter)	Regular Charge Current (amp.)	Assembly Figure
			L	W	H				
"SUPER MF"									
○**YTR4A-BS**	2.3	45	113	48	86	1.1	0.14	0.3	
○**YT4B-BS**	2.3	40	113	38	85.5	1.1	0.12	0.3	
YT4L-BS	3	35	113	70	85	1.6	0.18	0.4	
YTX4L-BS	3	50	113	70	85	1.4	0.18	0.4	
YT5L-BS	4	45	113	70	105	2.0	0.24	0.5	
▲**YTX5L-BS**	4	70	113	70	105	2.0	0.24	0.5	
YTX7L-BS	6	85	113	70	130	2.5	0.33	0.6	
YT7B-BS	6.5	85	150	65	93	2.7	0.33	0.7	
YTX7A-BS	6	90	150	87	93	2.6	0.33	0.7	
YTX9-BS	8	120	150	87	105	3.0	0.40	0.9	
YTR9-BS	8	120	150	87	105	3.2	0.40	0.9	
★★**YT12B-BS**	10	180	150	69	130	4.1	0.50	1.0	
YT12A-BS	9.5	175	150	87	105	3.5	0.50	1.0	
YTX12-BS	10	180	150	87	130	4.2	0.60	1.2	
YTX14-BS	12	200	150	87	145	4.6	0.69	1.4	
YTX16-BS	14	230	150	87	161	4.7	0.78	1.4	
YTX16-BS-1	14	230	150	87	161	4.7	0.78	1.4	
◆**YTX20-BS**	18	270	150	87	155	6.3	0.93	1.8	
YTX20L-BS	18	270	175	87	155	6.3	0.93	1.8	
★**YTX20A-BS**	17	270	150	87	161	6.0	0.82	1.7	
"SUPER MF" (FACTORY ACTIVATED)									
YT9B-4	8	115	150	70	105	3.4	N/A	0.8	
★★**YT12B-BS**	10	125	150	69	130	4.1	N/A	1.0	
YT14B-4	12	135	152	70	145	4.6	N/A	1.2	
YIX30L	30	385	166	126	175	9.9	N/A	3	
"INTEGRATED MF", NON-SPILLABLE (FACTORY ACTIVATED)									
YTZ3S	2.5	-	113	70	85	1.4	N/A	0.3	
YTZ5S	3.5	65	113	70	85	1.6	N/A	0.4	
YTZ6S	5	90	113	70	105	2.3	N/A	0.5	
YTZ7S	6	130	113	70	105	2.1	N/A	0.6	
YTZ10S	8.6	190	150	87	93	3.2	N/A	0.9	
YTZ12S	11	210	150	87	110	3.7	N/A	1.1	
YTZ14S	11.2	230	150	87	110	3.9	N/A	1.1	

○ : with Fasten terminal ★★ : Can be supplied either Wet Charged or Dry chargedwith Acid bottle upon customer's request.
◆ : USA origin ▲ : YTX5L-BS:Has higher discharge rate performance thanYT5L-BS. ★ : Supplied from Yuasa Group affiliates.

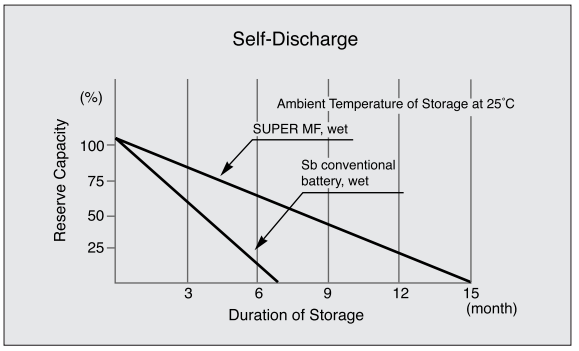
■ **SUPERIOR HIGH RATE PERFORMANCE**

The electrically low resistant separator and heavyduty plates allow the Yuasa SUPER MF batteries to yield 30% more and faster starting power over conventional batteries.



■ **LOWEST SELF-DISCHARGE**

The calcium grid reduces the self-discharge rate to only 0.2% a day against 0.5-1.0% for conventional batteries.



■ **SHELF LIFE**

The special plate material and the bone dry-charge construction enable the storage for nearly 2 years without noticeable loss of charge retention.

■ **TOUGHNESS**

Even if the batteries are left discharged for considerably long periods, a simple recharge will help restore full charge.

CAUTION: SELECT THE CORRECT ELECTROLYTE

Use the YUASA exclusive electrolyte for the first time. Match the battery type, specified in the following table, with ECR code number on the electrolyte bottle.

Do not use if the number is not identical. The use of other numbers or other additive electrolytes may cause the battery plates to become damaged and the battery service life shortened.

SPECIAL ACID PACK

Yuasa SUPER MF batteries are available for delivery in dry and charged condition for those who stock and resell batteries, with the special acid pack separately supplied, made of strong poly-vinyl tank. This will help batteries kept in the best dry charge condition and fresh for immediate activation.

UN Approval No.2796

THE CORRECT ELECTROLYTE

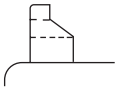
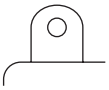
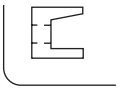
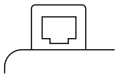
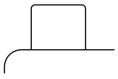
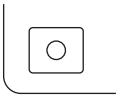
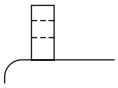
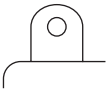
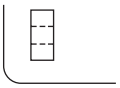
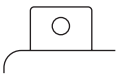
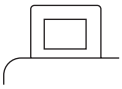
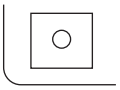
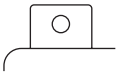
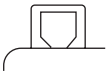
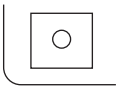
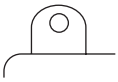
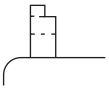
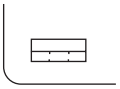
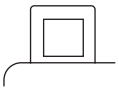
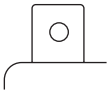
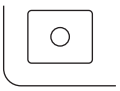
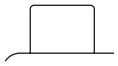
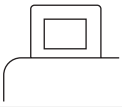
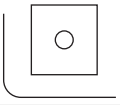
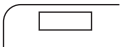
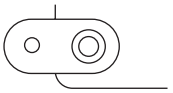
Battery Type	Specific Electrolyte	Volume of Electrolyte (liter)	SULFURIC ACID Specific Gravity (20˚C)
YTR4A-BS	ECR-0.14E	0.14	1.32
YT4B-BS	ECW-0.12E	0.12	1.35
YT4L-BS	ECR-0.18E	0.18	1.32
YTX4L-BS			
YT5L-BS	ECR-0.24E	0.24	1.32
YTX5L-BS			
YTX7L-BS	ECR-0.33E	0.33	1.32
YT7B-BS	ECRB-0.33E	0.40	1.32
YTX7A-BS	ECRA-0.33E	0.33	1.32
YTX9-BS	ECR-0.40E	0.40	1.32
YTR9-BS			
YT12B-BS	ECRA-0.50E	0.50	1.32
YT12A-BS	ECR-0.50E	0.50	1.32
YTX12-BS	ECR-0.60E	0.60	1.32
YTX14-BS	ECR-0.69E	0.69	1.32
YTX16-BS	FTH16-BS	0.78	1.32
YTX16-BS-1	FTH16-BS-1	0.78	1.32
YTX20-BS	ECS-0.93E	0.93	1.32
YTX20L-BS			
YTX20A-BS	-	0.82	1.32

HIGH PERFORMANCE MAINTENANCE FREE

Type	Capacity Ah/10HR	*CCA (A)	Max.Dimensions (mm)			Weight w/o Acid (kg)	Acid Volume (liter)	Regular Charge Current (amp.)	Assembly Figure
			L	W	H				
◆**YTX14AH-BS**†††	12	210	134	89	166	3.5	0.69	1.2	
◆**YTX14AHL-BS**	12	210	134	89	166	3.5	0.69	1.2	
◆**YTX20CH-BS** CS	18	270	150	87	161	5.1	0.82	1.8	
◆**YTX20H-BS**	18	310	175	87	155	5.6	0.93	1.8	
◆**YTX20HL-BS**	18	310	175	87	155	5.6	0.93	1.8	
◆**YTX20HL-BS-PW**	18	310	175	87	175S	5.6	0.93	1.8	
◆**YTX24HL-BS**	21	350	205	87	162	6.5	0.99	2.1	

◆ : USA origin ††† : Includes 10mm spacer for additional height required in replacing YB14A-A1 and YB14A-A2.
s : Height with 20mm spacer included for use in replacing YB16CL-B.

BATTERY TERMINALS

Terminal Shape			Battery Type
Front	Side	Top	
			YB14L-A1 YTX16-BS-1
			YB9L-A2 YB16AL-A2 12N5.5-4A
			YB7C-A YB7L-B Y60-N24AL-B Y60-N24L-A Y60-N24-A 12N24-3 12N24-3A
			YB12C-A YB16B-A Y50-N18L-A3 YT7B-4 YTX16-BS YTX20L-BS YTX14AH-BS YTX14AHL-BS YTX20H-BS YTX20HL-BS YTX20HL-BS-PW YTX24HL-BS
			YT4L-BS YT5L-BS YTX5L-B YTX7A-BS YTX7L-BS YTX9-BS YT12A-BS YTX12-BS YTX14-BS YTX20A-BS YB4L-A YB4L-B YB16B-A1 YB16CL-B YTZ3, 5, 6, 7, 10, 12, 14 YT7B-BS YT12B-BS
			YB3L-A YB5L-B YB7-A YB9A-A YB10L-B YB9-B YB9L-B YB12A-A YB12A-AK YB12AL-A YB12A-B YB14A-A1 YB16-B YB16-B-CX YB16L-B SYB16L-B YB16HL-A-CX YB30L-B 12N5-3B 12N5-4B 12N5.5-3B 12N5.5A-3B 12N5.5-4B 12N7-3B 12N7-4A 12N7-4B 12N7B-4A 12N7D-3B 12N9-3 12N9-4B-1 12N10-3A 12N10-3A-1 12N11-3B 12N12A-4A-1 12N12-3B 12N18-3 6N6-3B 6N6-3B-1 6N11A-1B 6N11A-3A 6N11A-4 6N11-2D 6N12A-2D B39-6 B49-6 B54-6 B38-6A
			HYB16A-A YB18-A YB18L-A Y50-N18A-A Y50-N18L-A Y50-N18L-A-CX SY50-N18L-AT
			YB10A-A2 YB10L-A2 YB10L-B2 SYB10L-A2 YB12B-B2 YB14-A2 YB14A-A2 YB14L-A2 SYB14L-A2 YB14-B2 YB14L-B2 SYB14L-A2 12N10-3A-2 12N11-3A-1 12N14-3A
			YHD-12 12N9-3A 6N12-4A (Positive Terminal)

BATTERY CROSS REFERENCE CHART

HIGH PERFORMANCE MAINTENANCE FREE	MAINTENANCE FREE VRLA	YUMICRON CX	YUMICRON	CONVETIONAL	HIGH PERFORMANCE MAINTENANCE FREE	MAINTENANCE FREE VRLA	YUMICRON CX	YUMICRON	CONVETIONAL
-	-	-	6YB11-2D	6N11-2D	**YTX14AHL-BS**	-	-	YB14L-B2	-
YTX4L-BS	YT4L-BS(Discontinued)	-	YB4L-A, YB4L-B	-	**YTX20CH-BS**	YTX16-BS	-	-	-
YTX5L-BS	YT5L-BS(Discontinued)	-	-	-	**YTX20H-BS**‡	YTX20-BS‡	YB16-B-CX	YB16L-B	-
-	-	-	YB5L-B	12N5-3B	**YTX20H-BS**‡	YTX20-BS‡	-	YB18-A	-
-	-	-	YB7L-B	12N7-3B	**YTX20HL-BS-PW** S	-	-	YB16CL-B	-
-	-	-	YB7-A	12N7-4A	**YTX20HL-BS** C	YTX20L-BS C	YB16HL-A-CX	-	-
-	-	-	YB9-B	12N9-4B-1	**YTX20HL-BS**‡	YTX20HL-BS‡	-	YB16L-B	-
-	-	-	YB9L-B	12N9-3B	**YTX20HL-BS**‡	YTX20HL-BS‡	-	YB18L-A	-
-	-	-	YB9L-A2	12N9-3A-1	**YTX24HL-BS**‡	-	Y50-N18L-A-CX	Y50-N18L-A	-
-	-	-	YB10L-A2	12N10-3A-2	**YTX24HL-BS**	-	-	Y50-N18L-A3	-
-	-	-	YB12A-A	12N12A-4A-1	**YTX24HL-BS‡‡(1)**	-	-	SY50-N18L-AT	-
YTX14AH-BS	-	-	YB14-A2, YB14-B2	-	-	YIX30L(F/A)	-	YB30L-B	-
YTX14AH-BS‡‡‡	-	-	YB14A-A1, YB14A-A2	-	-	-	-	53030	Y60-N24AL-B
YTX14AHL-BS	-	-	YB14L-A2	12N14-3A					

VRLA Valve Regulated Lead Acid.

‡‡‡ Includes 10mm spacer for use in replacing YB14A-A1 and YB14A-A2.

S ncludes 20mm spacer for use in replacing YB16CL-B.

C Requires use of Yuasa Cover/Spacer Kit part no. 478651

‡ The YTX20 series batteries may be used as an optional upgrade,but some modification to the hold down may be necessary. See label for retrofit cautions.

‡‡ Top and front terminal mounts only.

(1) Eliminates need for sensor (needs to be disabled).

F/A Factory Activated Battery

Motorcycle & Scooter Battery Application

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
50	Bite	01-	YTZ7S
	C50SW	94	YB4L-B
	C50Z, Z2	79-80	6N4-2A-4
	CB50J, F	81	6N2-2A
	CB50 J, J (B)	79-81	6N4-2A-4
	CD50	82	6N4-2A-4
	CF50	82	6N4-2A-4
	CRM50	93-94	YB3L-A
	Dio50 (SP50 Dio)	93-94	YT4L-BS
	Dio Z4	-02	YTZ7S
	Fifty		YB4L-B
	Giorno	01-	YTZ7S
	Giorcub	01-	YTZ7S
	Gorilla	00-	YTR4A-BS
	GP Dio		YTX4L-BS
	Gyro X	00-	YTX7L-BS
	Gyro Up	00-	YTX7L-BS
	Gyro Canopy	00-	YTX7L-BS
	Julio	01-	YTZ7S
	KGB	-99	YTZ7S
	Lead	-01	YB4L-BS
	Lead	01-	YTZ7S
	Little Cub	00-	YT4L-BS
	MB5	82	YB2.5L-C
	MB50 S (A)	80	6N4-2A-7
	MBX50FW, FWD, S, SD, SWD	85-87	YB3L-A
	Monkey		YTR4A-BS
	MT50S, T	92-93	6N4-2A-12
	MT50S	90-91	6N4-2A-7
	MTX50FR, RS, S	85-89	YB3L-A
	MTX50 S (E)	84	YB2.5L-C
	NA50 Express Ⅱ	80-81	6N4-2A-8
	NB50, M	83-87	YT4L-BS
	NC50 Express	80-83	6N4-2A-8
	ND50 M	82	YB4L-B
	NH50 MS	86-98	YB4L-B
	NP50, M Sky	-97	YB4L-B
	NQ50, M	85	YB4L-B-CA
	NQ50, M	86-87	YT4L-BS
	NS50F, NS 1	90-99	YB3L-A
	NSR50, A, F	87-95	YB3L-A
	NU50 Urban Express	82-83	YB2.5L-C-1
	NU50M Urban Exp. Delux	82-83	YB4L-B
	NX50M Express SR	81-82	YB4L-B
	PA50 Ⅰ, Ⅱ	78-83	6N4B-2A-5
	PK50, M, SM	90-99	YT4L-BS
	PK Wallaroo		YTX4L-BS
	Press Cub	-00	YT4L-BS
	PX50 MS	84	YB4L-B
	PXR		YB4L-B
	SA50LX, N,S, SR,	88-98	YT4L-BS
	SA Vision		YTX4L-BS
	SB50	89-90	YT4L-BS
	SC01	97	YT4L-BS
	SC01	01-	YTX4L-BS
	SE50	88-89	YT4L-BS
	SFX50 Sport	95-99	YTR4A-BS
	SG50M	90	YT4L-BS
	SGX50 Sky	97	YT4L-BS
	SH50	87-89	YB4L-B
	SH50 Scoopy	96-97	YTR4A-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
50	SH50 Scoopy, Crea	01-	YTZ7S
	Shadow50	97	YT4L-BS
	Shadow50	01-	YTX4L-BS
	SJ50 Bali	-97	YTR4A-BS
	SK50, M	92-94	YT4L-BS
	SK50, M	97-98	YTR4A-BS
	Sky	00-	YTX4L-BS
	Sky Dax	99	YT4L-BS
	Sky Vetro	99	YTR4A-BS
	Sky De Luxe	99	
	SP Dio		YTX4L-BS
	SR50	97-	YTX4L-BS
	ST50 Dax	88-97	YT4L-BS
	Super Cub	-00	
	SXR		YTR4A-BS
	SZX50	-00	YTR4A-BS
	Tact	01-	YTZ7S
	TC50	00-	YTX7L-BS
	Vision50	93-94	YB4L-BS
	Zoomer	01-	YTZ7S
	Z50J	92	YTR4A-BS
	Z50J, 2, 3	79-91	6N2A-2C-3
	ZB50P Monkey	88	YT4L-BS
	ZX50	94-	YTR4A-BS
	X8R-X/X8R-S	99-	YTR4A-BS
70	C70, DM	82-84	YB5L-B
	C70	80	6N11-2D
	C70-MA	90	6N4-2A-4
	C70 Passport	82-83	YB5L-B
	C70 Passport	80-81	6N11-2D
	C70Z, Z2	79-93	6N4-2A-4
	CD70	81	6N4-2A-4
	CD70 Ⅱ PK	92	YB2.5L-C
	CF70	82	6N4-2A-7
	CT70 (Canada)	91-94	YT4L-BS
	CT70 (Canada)	86	6N4-2A-4
	CT70 Trail	80-82	6N4-2A-8
	ST70	89-94	YT4L-BS
	C70CM	83-84	6N4-2A-4
	C70CMP	97	YB4L-B
	C70W	95	YB4L-B
	ST70 Dax	80-	6N2-2A-8
75	CRM75, MTX75R	89-94	YB3L-A
	MBX75 FW	83	YB3L-A
	SA75M	91	YT4L-BS
	Scoopy75	93-94	YB5L-B
	SH75	87-89	YB5L-B
	NSR75	92-94	YB3L-A
80	CH80	86-04	YT5L-BS
	MB80 S	80	6N4-2A-7
	MBX80 SW, SWD, 2, FWD	85-87	YB3L-A
	MCX80 S	83	YB3L-A
	MT80 S	80	6N4-2A-7
	MTX80 C	82	YB2.5L-C
	MTX80 R2, RS	87	YB3L-A
	NH80 MD, SD, MS	86-94	YB5L-B
	XL80	85-90	6N4-2A-8
	XL80 (USA)	83-85	6N4-2A-8

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
80	XL80 (USA)	80-82	6N4C-1B
90	C90, M	82-93	YB5L-B
	C90 CW	95	YB4L-B
	C90 D, Z	92-93	6N4-2A-4
	EZ90 (Cub)	91-96	YT5L-BS
	Shadow90		YTX5L-BS
	Shadow90	99	YT4L-BS
	Super Cub		YT4L-BS
	TH90T	96	YT4L-BS
100	BC100		YT4L-BS
	C100-M	88-92	YB5L-B
	C100-MA	87	YT4L-BS
	C100-TH	92	YT4L-BS
	CB100	94	6N6-3B
	CB100	70-	6N6-3B-1
	CB100 N	81	6N6-3B
	EX Bali	97	YT5L-BS
	GL100 Ⅱ	83	YB2.5L-C
	H100 S	86-88	6N4A-2A-7
	NF100, M	97	YTX5L-BS
	NH100-1D	98	YTX5L-BS
	NH100-1D	84-	YB5L-B
	SH100	-00	YTX5L-BS
	SH100 Scoopy	96	YT5L-BS
	SJ Bali EX	97	YT5L-BS
	SJ Bali EX		YTX5L-BS
	XL100	85-90	6N4C-1B
	XL100 (USA)	77-78	6N4C-1B
	XL100 (USA)	74-76	6N6-3B
	XL100S	83-85	6N4-2A-4
	XL100S	81-82	6N4C-1B
	XL100S	79-80	6N4-2A-4
	SCV100	03-	YTX5L-BS
110	CT110 Trail	86	6N4-2A-4
	CT110 Trail	80-84	6N4-2A-8
	LS110-TH	89-92	YB3L-A
	NT110V	97	YB2.5L-C
	NT110MV	97	YB4L-B
	NZ110 M, MS	93	YB2.5L-C
	NZ110 MM	93	YB4L-B
	NZ110 S, S1, RS	89-92	YB2.5L-C
	NZ110-TH	87	YB2.5L-C
	TH110-MA, M	91	YB2.5L-C
125	CA125	95-96	YTX7L-BS
	CA125 Rebel	95-97	YTX7L-BS
	CB125 B6		6N12A-2D
	CB Italia		6N6-3B
	CB125 K		6N12A-2D
	CB125N	79	6N6-3B-1
	CB125 RS	83	YB2.5L-C
	CB125S	76	6N6-3B-1
	CB125 S, S Ⅲ-V	79-82	6N6-3B
	CB125 S2, J, N	-79	6N6-3B
	CB125 T, T Ⅱ	80-81	6N6-3B
	CB125 T, T Ⅱ	90-93	12N9-4B-1
	CB125 TD	82	YB9-B
	CBR125R	04	YTZ6

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
125	CBX/Endurance		6N6-3B
	CD125 T	81-82	12N9-4B-1
	CD125 T		YB9-B
	CG125, -IR	80-91	6N6-3B
	CG125, -IR	92	YB3L-A
	CG125 (Kick-Stater)		YT4L-BS
	CG125 (E-Stater)		YTX5L-BS
	CH125	84	YB9-B
	CH125 Spacy	88-95	YTX9-BS
	CHA125T	96	YTX9-BS
	CL125 Scrambler	73-75	6N4C-1B
	CLR125	-99	YTX5L-BS
	CM125 C	82-94	12N9-4B-1
	CMX		YTX7L-BS
	CRM		YTX4L-BS
	CRM125 R	90	YT4L-BS
	CT125, Trail	77-89	6N4C-1B
	City Fly	98	YTX5L-BS
	CS		6N6-3B
	FES125, Panteon	03-	YTX7L-BS
	FES125	-00	YTR9-BS
	GL125 Ⅱ, -IN	87-97	YB2.5L-C
	MBX125 F	85	YB5L-B
	MT125 Elsinore	74-76	6N6-3B
	MTX125, R, R2	86-87	YB5L-B
	MTX125 RW, RW-TH	85-90	YB3L-A
	NES125, Dylan	00-	YTX7L-BS
	NH125 Lead	83-86	YB5L-B
	NS125 F	89	YB5L-B
	NS125 R, R2, R3	87	YB5L-B
	NSR125 F Ⅲ/R/R2/Raiden	92	YTX5L-BS
	NSR125 R	97	YTX5L-BS
	NZ125	93	YB3L-A
	NX125		12N9-4B-1
	NX125 Transcity	97	YTX7L-BS
	Pantheon125	99	YTR9-BS
	SES125	00-	YTX7L-BS
	Shadow125	99	YTX7L-BS
	SH125	01-	YTX7L-BS
	Spacy125	01-	YTZ12S
	TL125	88	6N2-2A
	TMX125	85	6N6-3B
	VT125C	01-	YTZ7S
	VT125 Shadow		YTX7L-BS
	XL125	85-90	6N4C-1B
	XL125	74-78	6N4C-1B
	XL125R/Pais Dakar	85/87	12N9-4B-1
	XL125 S	79-82	6N4-2A-4
	XL125 S	84	6N4C-1B
	XL125SD		YB2.5L-C-2
	XLR125R	98	YTX7A-BS
	XLV125 Valadero	01-	YTZ7S
	NXR125		YTX5L-BS
135	HX135, -TH	84-87	YB2.5L-C
145	GL145 Ⅱ	83/88	YB2.5L-C
150	CBX150 S	88	YB7L-B
	FES150	03-	YTX7L-BS
	FES150	99-02	YTR9-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
150	Foresight150		YTX7L-BS
	FSX150	98	KW6-840
	NES150	03-	YTX7L-BS
	NES150 Z	01	YTX7L-BS
	NSR150, R, R2	94-98	YB3L-A
	NSR150, R, R2	89	YB2.5L-C
	NX150	89	YB7L-B
	Pantheon		YTR9-BS
	SES150	00-	YTX7L-BS
	SH150		YTX7L-BS
	XLR150	00-	YTX5L-BS
	CG150 TITAN		YTX7L-BS
156	GL156S	95	YB2.5L-C
175	XL175	73-78	6N6-3B
185	CM185 T, T Twinstar	78-79	6N12A-2D
	CT185	82-86	6N4C-1B
	XL185	85-93	6N
	XL185 S	79-83	6N4-2A-4
200	CB200	74-76	12N9-4B-1
	CBX200 S	93	YB7L-B
	CM200 T	87-89	12N9-4B-1
	CM200 T	85/88	YTX12-BS
	CM200 T Twinster	81-82	12N9-4B-1
	CM200 T Twinster	80	6N12A-2D
	CT200	86-89	YB9-B
	GLS200	94	YB7L-B
	MTX200 RW	85	YB3L-A
	TLR200	86-87	6N2-2A
	TR200	87	YTX7A-BS
	TR200	86	YTX9-BS
	XL200 R/Paris Dakar	83-84	12N9-4B-1
	XR200	00-	YTX7L-BS
250	CA250 T	95	YTX7L-BS
	CA250TS	97	YTX7L-BS
	CB250	91-97	YTX7L-BS
	CB250FV Hornet		YTX7L-BS
	CB250 G, K, N, ND	-82	YB12A-A
	CBR		YTX7L-BS
	CB250, R	94-99	YTX7L-BS
	CB250 RS	80	12N9-4B-1
	CB250 T	80	YB12A-A
	CB250 T2 Twin	79	YB12A-A
	CBX250, RS-YA	85-87	YTX9-BS
	CBX250 TWISTER		YTX7L-BS
	CD250 U	85-89	YTX9-BS
	CH250	87-89	YTX12-BS
	CJ250 T		YB9-B
	CL250 S	82	YB9-B
	CM250C	82-85	YB9-B
	CM250, Custom	82-83	YB9-B
	CMX250 C Rebel	96-99	YTX7L-BS
	CMX250 C Rebel	85-87	YB9L-B
	CMX250 CD Rebel, LTD	86	YB9L-B
	CMX250C3	01-	YTX7L-BS
	CN250 Helix, fusion TypeXX	86-	YTX12-BS
	CRF250X	04	YTX5L-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
250	FES250V Foresight	98-00	YTX12-BS
	FES250 Foresight	01-	YTZ12S
	Forza X, Z	01-	YTZ12S
	FTR		YTX5L-BS
	NSS250 JAZZ	01-	YTZ12S
	MT250 Elsione	74-76	6N6-3B
	NSR250RR/R2T	97	YB3L-A
	NS250S	-01	YTZ12S
	NX250	88-96	YTX7L-BS
	PS250	04-	YTZ12S
	SL230		YTX5L-BS
	VT250	90-95	YTX7L-BS
	VT250CS	-97	YTX7L-BS
	VT250C V-TWIN MAGNA		YTX7L-BS
	VTR250 Interceptor	88-90	YB9-B
	XL230	01-	YTX7S
	XL250	72-76	6N6-3B
	XL250 R	84-87	YB3L-A
	XL250 RC	82-83	YB3L-A
	XL250 S	80-81	6N4-2A-4
	XR250 L, R	91-98	YT4L-BS
	XR250		YTX5L-BS
	XR250 TORNADO		YTX7L-BS
	CBX250 TWISTER		YTX7L-BS
350	CB350F, CB350K		YB12A-A
	CB350 S	86	YB112A-B
	XL350	74-78	6N6-3B
	XL350R, XR350R	84-87	YB3L-A
	XR350R	84-85	YB3L-A
360	CB360G	74-76	12N12A-4A-1
	CB360T, Scrambler360	74-76	12N12A-4A-1
	CJ360T	76-77	12N9-4B-1
400	CB400F/F Ⅱ	75	12N12A-4B-1
	CB400F (CBI)	89-90	YTX9-BS
	CB400 N	79	YB12A-A
	CB400 SS	-03	YTR4A-BS
		03-	YTZ10S
	CB400 Super Four	01-	YTZ10S
	CB400T Hawk	80-81	YB12A-A
	CB400T Hawk Ⅰ	78-79	12N9-4B-1
	CB400T Hawk Ⅱ	78-79	YB12A-A
	CM400A Hondamatic	79-81	YB12A-A
	CBR400RRR	86-89	YTX9-BS
		92-94	YTX7L-BS
	CBX400F/F Ⅱ		YB12A-A
	CM400C Custom	81	YB12A-A
	CM400E/T	79-82	YB12A-A
	CX400 C	81-83	YB14L-A2
	NS400R	85	YT5L-BS
	NS400 R/Raiden		YTX5LBS
	NV400 DC Shadow Skasher	01-	YTZ10S
	NV400 DC Shadow	01-	YTX14-BS
	NV400 Steed	01-	YTZ10S
	NV400C	95	YTX9-BS
	Silver Wing400	01-	YTZ12S
	VF400 F	83	YB12A-A
	VFR400R Ⅲ	90-91	YTX7A-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
450	CB450K/K7		12N12A-4A-1
	CB450S	86-87	YB12A-B
	CB450S	88	YB14-B2
	CB450N	85	YB12AL-A
	CB450SC Nighthawk/S	85-86	YB12A-A
	CB450SC	82-86	YB12A-A
	CB450T Hawk	82	YB12A-A
	CM450A	82-83	YB12A-A
	CM450C Custom, E	82-83	YB12A-A
	CMX450C, Rebel	86-88	YB12A-A
	CRF450X	05	YTZ7S
500	CBF500	04-	YTZ10S
	CB500	04-	YTZ10S
	CB500K-1/K-3		12N12A-4A-1
	CB500S	98-99	YTX9-BS
	CB500T Twin, Four	75-76	12N12A-4A-1
	CBR500F	87-89	YTX9-BS
	CX500, C, E, D	78-82	YB14L-A2
	CX500TC	82	YB14L-A2
	CX500 Custom		YB12A-A
	FT500 Ascot	82-83	YB12A-A
	GB500	89-90	YB12A-B
	GL500 Silber Wing	81-82	YB14L-A2
	GL500 Ⅰ Intercept	81-82	YB14L-A2
	NX500	88-95	YTX9-BS
	VF500C V30 Magna	84-85	YB12A-A
	VF500F, F Ⅱ Interceptor	84-85	YB12A-A
	VT500C Shadow	83-86	YB12A-A
	VT500E	83-85	YB12A-A
	VT500FT Ascot	83-84	YB12A-A
	XBR500	85-86	YB12A-B
	XBR500, S	87-88	YB14-B2
	XL500R	82-87	YB3L-A
	XL500S	79-81	6N4-2A-4
550	CB550	83-84	YB12AL-A
	CB550 F	74-77	12N12A-4A-1
	CB550 K2/K4	77-78	12N12A-4A-1
	CB550SC	83-85	YB12AL-A
	CBX550F, F Ⅱ	82-83	YB12A-A
600	CB600 F, Hornet, ABS	04	YTX7L-BS
	CBF600N, NA	03-	YTX7L-BS
	CBF600S, SA	03-	YTX7L-BS
	CB600 F	01-	YTZ7S
	CB600 SF	98-01	YTX7L-BS
	CB600 SF	02	YTZ7S
	CBR600 F, F Ⅱ, F Ⅲ, SE	95-99	YTX9-BS
	CBR600F/SP	87-00	YTX9-BS
	CBR600F/SP	01-	YTZ10S
	CBR600FS/SX	01-	YTZ10S
	CBR66 F4i, 600RR	01-	YTZ10S
	CBX600E	83	YB12AL-A
	FJS600, Sliver Wing	01-	YTZ12S
	Hornet600	98	YTX7L-BS
	NTV600	88-92	YTX9-BS
	NV600C	89-94	YTX9-BS
	Shadow600		YTX9-BS
	Silver Wing	88-00	YB14-B2
	VT600C	88-97	YTX9-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
600	XL600R	83-87	YB3L-A
	XL600LM	85-91	YB14-A2
	XL600 Transport	-87	YB12A-B
	XL600V	87-93	YB14-B2
	XL600V	94-00	YB12A-B
	XL600V, Transport	95-97	YB12A-B
	XR600R, L	85-98	SUM-3
	VT600 C, CD Shadow Deluxe	04-	YTZ10S
	VT600 C Shadow	88-99	YTX9-BS
650	CB650	79-82	YB12A-A
	CB650 C Custom	80-81	YB12A-A
	CB650 SC Custom	82	YB12A-A
	CB650 SC Nighthawk	83-85	YB12AL-A
	CB650Z	79	YB12A-A
	CBX650E Nighthawk	82-83	YB12AL-A
	CBX650E Nighthawk	84	YB14L-A2
	CX650C	83	YB14-A2
	CX650 Euro,Turbo	83	YB14L-A2
	Deauville650		YTX9-BS
	FX650	-01	YTX9-BS
	GL650 Silver Wing	83	YB14L-A2
	GL650 Ⅰ Interstate	83	YB14L-A2
	NT650 Hawk GT	88-90	YTX9-BS
	NT650V	98-01	YTR9-BS
		02-	YTZ14S
	NTV650 Revere	88-97	YTX9-BS
	NX650 Dominator	88-97	YTX9-BS
	SLR650	97-98	YTR9-BS
	Vigor650	99	YTR9-BS
	XL650, V, Transalp	01-	YTZ12S
	XR650L	93-	YTX9-BS
	XRV650	88-89	YB14-B2
700	CB700SC	84-86	YB14L-A2
	VF700C Magna	87	YB12A-A
	VF700C Magna	84-86	YB14L-2
	VF700F Interceptor	84-85	YB14L-2
	VFR700 F	86	YB12A-B
	VFR700F, F Ⅱ Interceptor	86-87	YB12A-B
	VT700C Shadow	86-87	YB14-B2
	VT700C Shadow	84-85	HYB16A-AB
750	Africa Twin		YB14B-2
	Africa Twin	93	YTX14-BS
	CB750, C, F, F2	-88	YB14L-A2
	CB750 F Ⅱ	91-	YB14-A2
	CB750A	76-78	Y50-N18L-A
	CB750FA	93-95	YB14-A2
	CB750K	-82	YB14L-A2
	CB750 KZ	80	YB14L-A2
	CB750 Nighthawk	91-95	YB14-B2
	CB750 Nighthawk	82-83	YB14L-A2
	CB750SC	84-85	YB14L-A2
	CB750SC	91-92	YB14-A2
	CBX750F	84-86	YB14-A2
	CBX750F Ⅱ	86	YB14-A2
	CBX750P2	84-	YB14L-A1
	CR750 45		YTX9-BS
	NR750	92	YTX12-BS
	NV750, Shadow	97-98	YTX14-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
750	NV750 Shadow Slasher	01-	YTZ14S
	RVF750R	94-95	YTX9-BS
	VF750C Magna	93-94	YTX9-BS
	VF750C Magna	87-92	YB12A-A
	VF750C Magna	82-86	YB14-A2
	VF750C		YTX12-BS
	VF750C	95-97	YTX12-BS
	VF750F Interceptor	83-84	YB14-A2
	VF750S Sabre	82-83	YB14L-A2
	VFR750F	87-89	YTX12-BS
	VFR750F	90-97	YB14-B2
	VFR750R	88-90	YTX9-BS
	VT750C, CA	04-	YTZ12S
	VT750C Shadow	83-87	HYB16A-AB
	VT750C Shadow	98-00	YTX14-BS
	VT750C, C Ⅱ Shadow	98-01	YTX14-BS
	VT750CD, CD Ⅱ Shadow Dlx	98-99	YTX14-BS
	VT750DC	01-	YTZ14S
	XLV750R	83	YB14-A2
	XRV750 African Twin	93-01	YTX14-BS
	XRV750 African Twin	90-92	YB14-B2
800	PC800 Pacific Coast	89-98	YTX12-BS
	VFR800, A Interceptor, ABS	02-	YTZ12S
	VFR800F Ⅰ	98-01	YTX12-BS
	VFR800F Ⅰ	02	YTZ12S
	VT800C Shadow	88	YB14-B2
	VFR800	01-	YTZ12S
	VFR800P	01-	YTZ14S
900	CB900C	80-82	YB14L-A2
	CB900F Bold ｢	79-83	YB14L-A2
	CB900F Hornet	02-	YTZ10S
	CB900 FZ80		YB14L-A2
	CBR900RR FireBlade	92-99	YTX9-BS
	CBR900RR FireBlade	00-02	YTZ10S
	CBR929R	-00	YTZ10S
	CBR954RR	01-	YTZ10S
1000	CB1000C	83	YB14L-A2
	CB1000F	93-96	YTX12-BS
	CB1000FT	93-96	YTX12-BS
	CBR1000RR Fireblade	04	YTX12-BS
	CBR1000F	87-97	YB14L-B2
	CBX1000	79	YB18L-A
	CBX1000 (Opt.)	81	YB18L-A
	GL1000, LTD, K Gold Wing	-79	Y50-N18L-A
	VF1000F Interceptor	84-85	YB16B-A
	VF1000F Bold ｢	85	YB16B-A
	VF1000R	84-86	YB16B-A
	VTR1000 F	01-	YTZ12S
	VTR1000 F	97-00	YTX12-BS
	VTR1000SP Ⅱ	04	YTX12-BS
	VTR1000SP	00-	YTZ12S
	RVT1000R RC51	00-	YTZ12S
	Varadeo	99	YTX14-BS
	XL1000V	03-04	YTX20A-BS
	XL1000V	99-02	YTX14-BS
1100	CB1100F Bold ｢, R, R Ⅱ	81-83	YB14L-A2
	CB1100SF	00-01	YTX12-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
1100	CBR1100 XX	01-	YTZ12S
	CBR1100 XX Blackbird	97-00	YTX12-BS
	GL1100, D Gold Wing	80-83	Y50-N18L-A
	GL1100A Aspencade	80-83	Y50-N18L-A
	GL1100 Ⅰ Interstate	80-83	Y50-N18L-A
	ST1100A	95-01	YTX14-BS
	ST1100, A Police, Pan Eur.	90-	YTX14-BS
	VF1100 C Magna	83-86	YB18-A
	VF1100 S Sabe	84-85	YB18L-A
	VT1100 C, C Ⅱ Shadow	85-96	HYB16A-AB
	VT1100 C2 Shadow Sabre	00-04	YTX14-BS
	VT1100 C Ⅱ	95-00	HYB16A-AB
	VT1100C, C3, T Shadow	01-04	YTX14-BS
	VT1100 C Ⅲ	95-00	HYB16A-AB
1200	GL1200 Gold Wing	84-87	Y50-N18L-A
	GL1200 Aspencade	84-87	Y50-N18L-A
	GL1200 I/A	86-87	Y50-N18L-A
	GL1200 SEI	86	Y50-N18L-A
1300	CB1300 Super Four	01-	YTZ14S
	CB1300DC X4 Type LD	01-	YTX14-BS
	Pan-European	04	YTZ14S
	STX1300	01-	YTZ14S
	ST1300, ABS	03-	YTZ14S
	VTX1300C, S Retro	03-04	YTX14-BS
	VTX1300R, S, C	05	YTX14-BS
1500	GL1500 A Aspencade	95-97	Y50-N18L-A3
	GL1500 C (F6C)	97-01	YTX14-BS
	GL1500 Gold Wing	88-90	Y50-N18L-A3
	GL1500 Ⅰ Gold Wing Inter.	91-96	Y50-N18L-A3
	GL1500 SE Gold Wing SE	91-00	Y50-N18L-A3
	GL1500 Valkyrie	97-03	YTX14-BS
1800	GL1800A GOLD WING	01-04	YTX20L-BS
	VTX1800C, N, R Retro, S	02-04	YTX20L-BS
	KAWASAKI		
50	AR20		6N6-1D-2 (6N6-1C)
	AR50 C2-C4		YB12A-A
	AR50 C5 (GR, UK)		6N6-3B-1
	AR50 C5 (EU)		YB12A-A
	AR50 C6-C10		6N6-1D-2 (6N6-1C)
	AE50 A1, AR50 A1	-92	6N6-1D-2
	AV50	-92	6N6-1D-2
	KMX50A	88-	6N2-2A-7
	MX50A	-95	6N2-2A-7
	MX50B, B2	-98	YB2.5L-C-4
80	AR80 C2-C8		6N6-1D-2 (6N6-1C)
	AE80, AR80A	-98	6N6-1D-2
	KMX80	88-	6N2-2A-7
	MX80B	-98	YB2.5L-C-4
90	AN90B	-95	12N5.5A-3B
100	G3SS Series	75	6N4-2A-5
	G4TR Series	73-75	6N4-2A-5
	G5 Series	74-75	6N4-2A-5

C.C.	MODEL	YEAR	YUASA BATTERY
	KAWASAKI		
100	KE100A, KM100A	79-81	6N6-1D-2
	KE100A, KM100A	76-78	6N4-2A-5
	KE100, B1-B15 (EU)		6N4-2A-5
	KE100 B16-B17	82-	6N6-1D-2
	KM100	-92	6N6-1D-2
	KV100A	76	6N4-2A-5
	KH100 G5-G8		6N6-3B-1
	KH100H	-95	6N6-3B-1
125	AR125 A1A-A8		12N5-3B
	AR125 B1-B8		12N5-3B
	AR125 S		12N5-3B
	BN125 A1-A2 Eliminator	01-04	YB9-B
	K125K	-94	6N6-3B-1
	K125-K7	-94	YB3L-B
	KDX125 A1-A4, SR	94-95	YB3L-A
	KDX125 B1-B4		YB3L-A
	KE125 A8-A12	-95	6N6-1D-2
	KH125 K1-K6		6N6-3B-1
	KH125 K7, K10		YB3L-B
	KH125 L1		6N6-3B-1
	KMX125 A1-A8, A11	86-02	YB4L-B
	KMX125 B1-B9	91-	YB4L-B
	KS125 Series	74-75	6N6-1D-2
175	F7 Series	71-75	6N4-2A-5
	KDX175 B	-92	6N4B-2A
	KE175 B	76-78	6N6-1D-2
	KE175 D, F	-92	6N6-1D-2
200	KDX200 B1-B2	-92	6N4B-2A-6
	KMX200 A2-A5	-97	YB4L-B
	KZ200 A	77-79	YB10L-B
	KZ200 A, C	-92	YB10L-B
	KZ200A	95	YB10L-B
250	D-TRACKER (LX250E)	02-	YTX7L-BS
	Estrella-BJ250 A2-A3 C2-C3	92-	YTX9-BS
	ER250 A	-95	YB9L-B
	ER250 B2-B3	83-84	YB9L-B
	EL250 A	95	YTX7L-BS
	EL250A, B, C Eliminator	91-96	YB9L-A2
	EL250 D, E, F		YB9L-A2
	EL252	96-02	YB9L-A2
	EX250 Ninja	95-04	YTX7L-BS
	GPX250R EX250 F2-F8	87-	YB9L-A2
	GPX250R-Ⅱ (EX250G1)	88-	YB9L-A2
	GPZ250R EX250 F9-F13	95-	YTX7L-BS
	GPZ250 EX250H1-H4	83-	YB9L-A2
	GPZ250R EX250 H5-H9	95-	YTX7L-BS
	F4 Series	69-70	12N5.5-4A
	F8 Series	71-72	6N2-2A-3
	F11 Series	73-75	6N4B-2A-3
	KE250 B	77-79	6N6-1D-2
	KH250 A	77	12N5.5-4A
	KH250 B	76-77	12N5.5-3B
	KL250 A	78-82	6N6-1D-2
	KL250C	83-84	6N6-1D-2
	KL250 D2-D16		YB4L-B
	KL250G, H Super Sherpa	00-04	YTX7L-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	KAWASAKI		
250	KLE250 Anhelo (LE250A)	-97	YTX7L-BS
	KLR250 D-KL250D	85-04	YB4L-A
	KLX250 B	82-83	6N4B-2A
	KLX250ES G1/G2	94-95	YTX7L-BS
	KR250 B, C, KR, 1S	-92	YB4L-B
	KZ250 A	79-82	YB10L-A2
	KZ250C	80-82	YB10L-A2
	KZ250G LTD	81-82	YB10L-A2
	KZ250D LTD	80	YB10L-A2
	KZ250L CSR	82	YB10L-A2
	KZ250 W LTD	83-95	YB10L-A2
	LTD250	80-81	YB10L-A2
	LX250 G, F	95	YB10L-A2
	S1 Series	73-75	12N5.5-4A
	Z250 A, C, J, LTD	-92	YB10L-A2
	Z250 GP C1	81	YB9L-A2
	ZR250A, B Balius	91-	YTX7L-BS
	ZXR250, R (ZX250A,C)	90-	YB9L-A2
	ZZ-R (EX250H)	90-93	YB9L-A2
	ZZ-R (EX250H)	99-02	YTX7L-BS
	250TR (BJ250F)	02-	YTX7L-BS
305	EX305 A1, B GP	83	YB9L-A2
	GPZ305	83	YB9L-A2
	KZ305 A CSR	81-82	YB10L-A2
	KZ305B CSR	82	YB10L-A2
	KZ305B LTD	87-88	YB10L-A2
	LTD305	87	YB10L-A2
	Z305 (CSR305)	88	YB10L-A2
350	F9 Series	73-75	6N4B-2A-3
400	EN400, -Twin	94	YB12A-A
	EN400B Vulcan	95	YB12A-A
	EX4 (EX400 A2/A3, B)	94	YB14L-A2
	FX400R (ZX400A)		YA12A-A
	FX400R (ZX400C2-C4, D)		YA12A-AK
	GPX400R (ZX400F)		YB12A-AK
	GPZ400F-Ⅱ (KZ400M)	83-	YB12A-AK
	GPZ400R (ZX400D)	85-87	YB12A-AK
	GPZ400S (EX400A)		YB12A-AK
	GPZ400S (EX400A)		YB14L-A2
	KH400	92	12N5.5-3B
	KH400A	76-78	12N5.5-4A
	KLE400 (LE400A)	91-	YTX12-BS
	KLX400R, KLX400SR	03-04	YT7B-BS
	KX400H	79	YB12A-A
	KZ400A Delux	77-78	12N12A-4A-1
	KZ400C, S	75-	12N5.5-4A
	KZ400D	74-77	12N12A-4A-1
	KZ400J	80-82	YB12A-A
	March		12N5.5-4A
	Mach Ⅱ		12N5.5-4B
	S3 Series	74-75	12N5.5-4A
	VN400A, C Vulcan	95-	YTX12-BS
	Z400 Custom (KZ400B)	78-	YB12A-A
	Z400 F ZR400B	84	YB12A-AK
	Z400FX (KZ400E)	77-79	YB12A-A
	Z400F-Ⅱ (ZX400C)	91-	YB12A-AK
	Z400GP (ZX400A)		YB12A-AK
	Z400LTD, -Ⅱ, (KZ400H,K)		12N12A-4A-1

C.C.	MODEL	YEAR	YUASA BATTERY
	KAWASAKI		
400	ZL400, A1 Eliminator	86-	YB12A-AK
	ZR400 B1		YB12A-AK
	ZR400C, G Zephyr	93-	YTX12-BS
	ZR400C, G Zephyr	-93	YB12A-AK
	ZR400D Xanthus	92-	YTX9-BS
	ZRX, -Ⅱ(ZR400E,F,D)	95-	YTX9-BS
	ZX-4 (ZX400G)		YB12A-AK
	ZX400H	92	YB12A-A
	ZXR400, R (ZX400L,H)	91	YB12A-AK
	ZXR400, R (ZX400M, L)	92-02	YTX9-BS
	ZZ-R400 (ZX400K)	-92	YB12A-AK
	ZZ-R400 (ZX400N)	93-	YTX12-BS
440	KZ440A LTD	80-82	YB12A-A
	KZ440C	80-81	YB12A-A
	KZ440D	82-84	YB12A-A
	KZ440H	82-83	
	LTD440	80	YB12A-A
	LTD440	84	YB12A-A
450	EN450A 454 LTD	85-90	YB12A-A
	Z450 LTD	87-89	YB12A-A
500	EN500A Valcan	90-93	YB12A-A
	EN500 LTD	90-95	YB12A-A
	EN500C Vulcan LTD	96-04	YB12AL-A2
	EN500D Ninja 500R	94-04	YB14L-A2
	ER5 (ER500A, B)	97-	YTX12-BS
	ER525KW	97-01	YTX12-BS
	ER537KW	97-01	YTX12-BS
	EX500	87-98	YB14L-A2
	GPZ500S (EN500D, E, F)	87-02	YB14L-A2
	H1 Series	73-75	12N9-3B
	KH500A	76	12N9-3B
	KLE500 (LE500)	91-02	YTX12-BS
	KZ500B	79-80	YB12A-A
550	GPZ550E/L		YB12A-AK
	GPZ550	82-87	YB12A-A
	GT550	89	YB12A-A
	GT550	91-93	YB12A-A
	LTD550 C1	80	YB12A-A
	LTD550 C2	81	YB12A-A
	LTD550 C3	82	YB12A-A
	LTD550 C4	83	YB12A-A
	VLE500A	91	YTX12-BS
	ZZ-R500 Ninja (ZX500D)	-98	YTX12-BS
	KZ550B, G, LTD, GP	79-89	YB12A-A
	ZF550		YB12A-AK
	ZR550A	83	YB12A-A
	ZR550B Zephyr	91-93	YB12A-A
	ZR550B Zephyr	94-97	YTX12-BS
	ZX550A GPZ	84-89	YB12A-AK
600	GPX600C Warbird	88-94	YB12A-A
	GPZ600E/L		YB12A-AK
	GPZ600R (ZX600A)	87-88	YB12A-A
	KL600A KLR	84-92	YB4L-B
	KL600R, KLR600 (KL600B)	85-88	YB14L-A2
	ZL600A Eliminator	86-87	YB12A-A
	ZL600B Eliminator	95-96	YB12A-AK

C.C.	MODEL	YEAR	YUASA BATTERY
	KAWASAKI		
600	ZX600D ZZR	90-92	YB12A-A
	ZX600E ZZR Ninja	93-02	YTX12-BS
	ZX600F ZX-6R Ninja	95-98	YTX12-BS
	ZX600 G/H/R	95-97	YTX12-BS
	ZZR600	98-	YTX9-BS
	ZX600K, M Ninja ZX6-RR	03-	YTX9-BS
636	ZX-6R Ninja (ZX636A)	03-	YTX9-BS
650	GPZ650R	92	YB12A-A
	KL650A, KLR	87-04	YB14L-A2
	KL650B Tengai	89-90	YB14L-A2
	KLR650 (KL650A)	87-91	YB14L-A2
	KLR650C	95-02	YB14L-A2
	KLX650 (LX650C)	93-95	YTX9-BS
	KZ650B	77-78	YB10L-A2
	KZ650C, D SR, E LTD, F	78-83	YB10L-A2
	KZ650H CSR	81-83	YB12A-A
	EJ650	99-00	YTX14-BS
	Tengai		YB14L-A2
	W650	00-02	YTX14-BS
	Z650	77-79	YB10L-A2
	Z650B1/B2/ZBSR		YB10L-A2
	Z650 SR	79	YB10L-A2
700	KZ700A	84	YB12A-A
	VN700A Vulcan	85	YB14L-A2
	ZN700A LTD	84-85	YB14L-A2
	ZN700 LTD (ZN700A)	95	YB14L-A2
750	GPX750R (ZX750F)	87	YB14L-A2
	GPZ750, F (ZX750A, E)	83-85	SYB14L-A2
	GPZ750A, E, G	92	YB14L-A2
	GPZ750R	92	YB12A-A
	GPZ750R Ninja (ZX750G)	85	YB14L-A2
	GT750	92	SYB14L-A2
	H2 Series	72-75	12N5.5-4A
	KZ750A	95	SYB14L-A2
	KZ750B	76-78	YB14L-A2
	KZ750B, G LTD	76-80	SYB14L-A2
	KZ750D	95	YB14L-A2
	KZ750E	81-82	YB12A-A
	KZ750F LTD, N Spectre	82-83	YB14L-A2
	KZ750H LTD, L LTD, GP	80-83	YB12A-A
	KZ750K LTD KI	83	YB14L-A2
	KZ750K LTD, M CSR	82-84	SYB14L-A2
	KZ750P GT	82-85	SYB14L-A2
	KZ750R L Ⅲ-L Ⅳ	83-84	YB12A-A
	KZ750Y LTD Y Ⅰ-Y Ⅱ	82-83	YB14L-A2
	VN750A Vulcan	86-04	YB14L-A2
	ZN750A LTD	84-85	YB14L-A2
	ZR750C, D Zephyr F	99-02	YTX12-BS
	ZR-7, S (ZR750)	00-	YTX12-BS
	ZX750E Turbo	84-85	SYB14L-A2
	ZX750F Ninja	87-90	YB14L-A2
	ZX750H ZXR HI Stinger	89-92	YB14L-A2
	ZX750-JI	91	YB12AL-A
	ZX-7R, P Ninja	96-03	YTX12-BS
	ZX-7RR Ninja	96-97	YTX9-BS
	ZXR750 (ZX750H)	90	YB12AL-A2
	ZXR750 (ZX750L)	91-93	YTX12-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	KAWASAKI		
750	ZXR750, R (ZX750J)	91-	YTX9-BS
	ZXR750R (ZX750K, M)	91-	YTX12-BS
800	Classic, Drifter	04	YTX12-BS
	Classic, Drifter	95-03	YTX14-BS
	VN800 A	95-99	YTX14-BS
	VN800 D	99-02	YTX14-BS
	VN800 Classic B	96-02	YTX14-BS
900	A4 900		YB10L-A2
	GPZ900R (ZX900A)	84-86	YB14L-A2
	GPZ900R (ZX900A)	90-93	YB14L-A2
	KZ900A	76-77	YB10L-A2
	KZ900B LTD	76	YB10L-A2
	Z1 Series	73-75	12N14-3A
	ZL900A	85-86	YB14L-A2
	ZX900A Ninja	84-92	YB14L-A2
	ZX-9R (ZX900B) Ninja	94-97	YTX12-BS
	ZX-9R (ZX900C, D) Ninja	98-02	YTX9-BS
	ZX-9R (ZX900E, F) Ninja	00-03	YTX9-BS
1000	GPZ1000RX A	86-87	YB14L-A2
	GTR1000 (ZGT00A)	86-02	YB18L-A
	KLV1000	04	
	KZ1000A	77-78	YB14L-A2
	KZ1000B LTD	77-78	YB14L-A2
	KZ1000C Police	78-79	YB14L-A2
		80-81	YB16L-B
	Z1-R (KZ1000D)	78/80	YB14L-A2
	KZ1000E Shaft	80	YB16L-B
	KZ1000E ST	79	YB16L-B
	KZ1000G Classic	80	YB14L-A2
	KZ1000J, M CSR	81-83	YB18L-A
	KZ1000 LTD K	81	YB18L-A
	KZ1000 R SS	81-83	YB18L-A
	KZ1000P Police	02-03	YTX20L-BS
	KZ1000P Police	82-01	YB18L-A
	Z1000	03-	YTX9-BS
	Z1000 MK2	79-80	YB14L-A2
	Z1000GTR	92	YB18L-A
	Z1000A, B, C, D, G	92	YB14L-A2
	Z1000J, K, LTD, R	92	YB18L-A
	Z1000ST	92	SYB16L-B
	ZG1000A Concours	86-04	YB18L-A
	ZGT1000A	95	YB18L-A
	ZL1000A Eliminator	87-92	YB14L-A2
	ZX1000A Concous	96-97	YB18L-A
	ZX1000A Ninja	86-92	YB14L-A2
	ZX10 B Tomcat	88-90	YB14L-A2
	ZX10 R	04	YT12B-BS
1100	GPZ1100A Unitrak	83-85	SYB16L-B
	GPZ1100 (ZXT10 E, F)	95-97	YTX14-BS
	KZ1100A	81-83	YB18L-A
	KZ1100B GP	82	SYB16L-B
		81	YB16L-B
	KZ1100D Spectre	82-83	YB18L-A
	KZ1100L LTD	83	YB18L-A
	Z1100B	-92	SYB16L-B
	Z1100ST	81-83	YB18L-A
	Zephyr1100 (ZRT10A)	97-98	YTX16-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	KAWASAKI		
1100	ZG1100-A7, 8	94	YB18L-A
	ZN1100B LTD	84-85	YB14L-A2
	ZR1100A, B	92-97	YTX16-BS
	ZRX1100/Ⅱ (ZRT10C,D)	97-00	YTX14-BS
	ZX-11 (ZX1100C) Ninja,	90-93	YB14L-A2
	ZX-11 (ZX1100D1) Ninja	94-98	YTX14-BS
	ZX1100 C-G	99	YTX14-BS
	ZX1100 D1	97-00	YTX14-BS
	ZXR1100 C	97	YTX14-BS
	ZZR1100EU (ZXT10C)	90-92	YB14L-A2
	ZZR1100EU (ZXT10D)	93-01	YTX14-BS
1200	ZG1200A, B Voyager	86-98	SY50-N18L-AT
	ZX-1200A1	00-	YTX14-BS
	ZRX1200R/S (ZRT20A/B)	01-	YTX14-BS
	ZX-12R (ZXT20B)	00-	YTX14-BS
	ZZ-R1200 (ZXT20C)	02-	YTX14-BS
1300	KZ1300A	79-83	Y50-N18L-A
	KZ1300B Touring	80	Y50-N18L-A
	Z/ZG1300A	84-89	Y50-N18L-A
	ZGT1300A	95	Y50-N18L-A
	ZN1300A Voyager	83-88	12N24-3
	ZN1300A Europe	83-92	Y60-N24L-A
	ZGT1300A	95-	Y50-N18L-A
1500	VN1500A, C Vulcan	87-98	Y50-N18L-A
	VN1500D, E N Vulcan Classic	96-04	YTX16-BS
	VN1500SE B Vulcan	88-94	Y50-N18L-A
	VN1500 G1 Vulcan Nomad, Drifter	99-04	YTX16-BS
	VN1500 F, H	00-02	YTX16-BS
	VN1500 J1, 2	99-02	YTX16-BS
	VN1500 L, H	-00	YTX16-BS
	VN1500 N, H	-00	YTX16-BS
	VN1500 P Vulcan Mean Streak	02-03	YTX16-BS
1600	VN1600-A Vulcan Classic	03-04	YTX16-BS
	VN1600-B Vulcan Mean Streak	04	YTX16-BS
2000	VN2000-A Vulcan	04	YTX16-BS
	SUZUKI		
50	A50KM	92	6N4-2A-4
	AD50	91-95	YT4L-BS
	Address50	-97	YT4L-BS
	AE50, 50M	91-95	YT4L-BS
	AG50T	95	YT4L-BS
	AH50	92-95	YT4L-BS
	AJ50	95	YT4L-BS
	AJ50 ZZS	-02	YT4B-BS
	AP50, R7	94-	YT4L-BS
	AY50, W, WR Katana	-98	YT4B-BS
	CP50	85-95	YTX4L-BS
	FA50, Shuttle	80-91	6N2-2A-4
	FB50, M	91-95	YT4L-BS
		-02	YT4L-BS
	GT50E, K, KE, U	77-80	6N4B-2A
	Katana50LC	97	YT4L-BS
	OR50	79-80	6N4B-2A
	RG50	91	YB4L-B

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C.C.	MODEL	YEAR	YUASA BATTERY
50	RB50	91	6N4-2A
	RV50	-81	6N4B-2A
	Sepia50	97-	YT4B-BS
	TR50S	98	YT4B-BS
	TR50 Street Magic	-02	YT4B-BS
	TS50ERK, K	78-81	6N4B-2A
	TS50W, XA, XK	91	YB4L-B
	Tune50	97-	YTX4L-BS
	UF50 Estilete	00	
	UR50(Velde)	-02	YT4B-BS
	ZILION		YTX4L-BS
	ZR50K, KE	79	6N4B-2A
	ZZ50	97	YTX4L-BS
	UX50 W Zillion	99	YTX4L-BS
	RC50	-02	YT4L-BS
	AZ50 (Lets Ⅱ･ZZ)	-02	YT4B-BS
	YR50	-02	YT4B-BS
75	TS75 Colt	75-77	6N4-2A
80	A80	92	6N4-2A
	CP80	92	YB5L-B
	DG80	91	YB4L-B
	FB80D	95	YTX5L-BS
	FB80, M	91-95	YT4L-BS
	FR80	95	YT4L-BS
	GT80E, EX, L, LX	-81	6N4B-2A
	RG80, C	85-95	YB4L-B
	TS80ER	91	6N4B-2A
	TS80X	84-87	YB4L-B
90	CS90G	91	YB5L-B
	RV90 Rover, Vanvan	-92	6N4B-2A
	TC90		6N4-2A
	TC90J, R		6N2-2A-4
	TS90		6N4-2A
	TS90J, R		6N2-2A-4
	FB90	-02	YT4L-BS
100	A100, Go-Fer	-91	6N4-2A
	AH100 Adress	95-96	YTX5L-BS
	AG100	91-95	YTX5L-BS
		-01	YTX5L-BS
		-02	YTX5L-BS
	AX100	91	6N4-2A
	B100P	91	6N4-2A
	FB100	91	YB5L-B
	GP100V	91	6N4-2A
	GT100	92	6N4B-2A
	SP100	83	6N4B-2A
	TC100 Blazer	73-77	6N4-2A
	TS100 Honcho	78-81	6N4B-2A
		73-77	6N4-2A
105	B105P		6N4-2A
110	UG110 Hokuto	00	YTX5L-BS
	HOKUTO		YTX5L-BC
	SMASH	04	Kick-YTZ3
			Cell-YTZ5

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C.C.	MODEL	YEAR	YUASA BATTERY
120	B120P		6N4-2A
125	AN125 (Vecstar)	95-96	YTX7A-BS
		-02	YTX7A-BS
	Best, Shogun R	04	Kick-YTZ3
			Cell-YTZ5
	Burgman		YTX9-BS
	DN125	91	YB7-A
	DR125, D, S		YTX4L-BS
	DR125R, SZ	91	6N4-2A
	DR125SE	94-97	YTX7A-BS
	DZ125	-02	YTX7L-BS
	Epicuro		YTX7A-BS
	GN125, E, U	82-98	YB7-A
	GP125, U	78	6N4-2A
	GS125ES	91-92	YB7-A
	GS125S	-99	YB7-A
	GT125, E, T, ET	74-79	12N5-3B
	GZ125 Marauder	99	YTX7L-BS
	K125	91	YB10L-B
	PG125 Gamma		YTX5L-BS
	RG125, F	92-95	YTX7L-BS
	RM125	-98	
	RV125 SE, R	94	YTX7L-BS
	RV125 Tracker	79-92	6N4-2A
		-02	YTX7L-BS
	SP125	86-88	6N4-2A
		82-83	6N4B-2A
	TC125 Prospector	73-77	6N4B-2A
	TF125	91	6N4B-2A
		-02	6N4B-2A
	TS125 Duster, ER	71-92	6N4B-2A
	TS125R, SZ	91-92	YTX4L-BS
	TS125X	92	YB4L-B
	TU125XT		
	UC125 Epicuro	99	
	VL125 Intruder LC	00	
		-02	YTX7L-BS
150	AN150	-98	YTX7A-BS
		-02	YTX7A-BS
	Burgman		YTX9-BC
	UC150 Epicuro	99	YTX7A-BS
	GT185, E (El. Starter)	73-78	12N11-3A-1
185	GT185 Adventurer	73-77	6N2-2A-4
	TC185 Ranger	74-77	12N11-3A-1
	TC185 Suerra	77-81	6N4B-2A
		71-76	6N4-2A
	TF185		6N4B-2A
	TS185ER	79	6N4B-2A
		-02	YT4L-BS
200	B200	91	12N7-4A
	DR200SE	96-04	YTX7L-BS
		-02	YTX7L-BS
	GT200N, EN	79	YB7-A
	RV200	-02	YTX7L-BS
	SP200	86-88	YB4L-B
	T200		12N5-3B
	TS200R, RM	91-92	YT4L-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	SUZUKI		
250	AN250 Sky Wave	98	YTX7A-BS
	AN250 Burgman	99	YTX7A-BS
		02-	Not Available
	DR250S (Europe)	90-95	YTX7L-B5
	DR250S	-87	YB4L-B
	DR250	-01	YTX5L-BS
	DR-Z250	01-04	YTZ7S
	GN250, E	88-98	YB10L-A2
	GNX250, E	85-92	YB10L-A2
	GS250T	80-81	YB10L-A2
	GSF250	95	YTX7A-BS
	GSX250, ES, EZ	82-92	YB12B-B2
	GSX250, ET	80-81	YB10L-A2
	GSX250F, S	91-95	YTX7A-BS
	GT250ET	94	YB10L-A2
	GT250, E Hustler	-81	12N5-3B
	GZ250 Marauder	99-03	YTX7L-BS
	RG250C, E, FC	-92	12N5-3B
	RGV250	89-93	YT4L-BS
	SP250	92	YB4L-B
	SP250	82-85	6N4B-2A
	TS250	92	6N4B-2A
	TS250 Savage	73-81	6N4B-2A
	TS250X	-94	YB4L-B
	TU250X	95-99	YB10L-A2
	VL250	-02	YTX7L-BS
	250SB	-02	
	Glass stocker	-02	YB10L-A2
	Big Boy	-02	YB10L-A2
	Volty	-02	YB10L-A2
300	GS300L	-85	YB12B-B2
350	DR350S, SH	90-93	YT4L-BS
	DR350SE	94-99	YTX7L-BS
	T350-1, -2	79	12N5-3B
	T350J, R	79	12N5-3B
370	SP370	78-79	6N4B-2A-3
380	GT380 Sebring	72-77	YTX9-BS
400	AN400 Burgman	99-02	YTX9-BS
	DR400S	92	6N4B-2A
	DRZ400 E	02	YT7B-BS
	DR-Z400, E, S	00-04	YT7B-BS
	GN400, L, T, TD, X	80-92	6N4B-2A-3
	GS400 B/N	77-79	YB10L-A2
	GS400, E	91	YTX9-BS
	GS400X	77-78	12N7-4A
		91-95	YTX9-BS
	GSF400	91-93	YTX9-BS
	GSF400 M		YTX9-BS
	GSX400E, ES, T, S	83-92	YB12B-B2
	GSX400E, FE, FX, L, T,S	80-81	YB10L-A2
	GSX400 EZ	82	YB12B-B2
	GSX-R400R, RF	91-95	YTX9-BS
	GSX400FS Inazuma	-02	YTX7A-BS
	GSX400T, S, ES	82-93	YB10L-A2
	GSX400 X	87	YB10L-B2
	Skywave 400	02-	Not Available

C.C.	MODEL	YEAR	YUASA BATTERY
	SUZUKI		
400	SP400	80/92	6N4B-2A
	SV400S	-02	YTX9-BS
	TS400 Apache	76-77	6N4B-2A
	(El.-Starter)	72-75	12N5-3B
	TS400T	92	YB10L-A2
	VZ400	-02	YTX7A-BS
425	GS425, E, L	79	YB10L-A2
450	GS450, E	83	YB12B-B2
		80-82	YB10L-A2
	GS450GA	82-83	YB12B-B2
	GS450L	83-86	YB12B-B2
		80-82	YB10L-A2
	GS450S	-88	YB12B-B2
	GS450T, TU	81-82	YB10L-A2
	GS450TX	83	YB12B-B2
		82	YB10L-A2
500	DR500, S	81-83	6N4B-2A-3
	DR500S	92	YB4L-B
	GS500E	89-04	YB10L-A2
	GS500	01-04	YB10L-A2
	GS500E, EU	89-00	YB10L-B2
	GS500EN	-	YB10L-A2
		-02	YB10L-B2
	GS500F	04-	YB10L-A2
	GT500B	92	YB10L-A2
	GT500 Titan	76-77	12N7-4A
	RG500 Gamma	-92	YT5L-BS
	RG500 Gamma	94	YT5L-BS
	SP500	81-83	6N4B-2A
	SP500	92	YB4L-B
	T500 Titan	-92	12N7-4A
550	GS550, D, E, EG, L, M, T	77-82	YB10L-A2
	GS550ES, E, L	83-86	YB10L-B
	GSX550E, L, ES, EF, EV	-92	YB10L-B
	GSX550	94	YB10L-B
	GT550J, K, L, M	-92	YB10L-A2
	GT550A, B, K, L, M,	73-77	12N11-3A-1
600	DR600R, RU, S, SU	85-89	12N5-3B
	GSF600, S, SU, U, U Ⅱ	95-	YTX9-BS
		-03	YTX9-BS
	GSX600F Katana	98-	YTX9-BS
	GSX600F Katana	88-97	YB10L-B2
	GSX-R 600 V, W	-97	YTX9-BS
		04	YTX9-BS
	RF600R, RU	93-97	YTX9-BS
	SP6600	-85	12N5-3B
	VS600GLF	95-97	YB16B-A
	VS600 GLS		YTX9-BS
650	AN650 ABS Burgman	04	YTX14-BS
	AN650	-02	YTX14-BS
	Burgman	03/05	YTX14-BS
	DL650-V-Storm	04	YTX12-BS
	DR650R, RU	92-94	YT4L-BS
	DR650R, RU	90-91	YB5L-B
	DR650RE, REU	94-95	YTX12-BS
	DR650RS, RSU	90-91	YB5L-B

C.C.	MODEL	YEAR	YUASA BATTERY
	SUZUKI		
650	DR650RSE, RSEU	91-	YTX14-BS
	DR650SE, SEU	91-96	YTX9-BS
		96-04	YTX9-BS
	DR650SES	95-	YTX12-BS
	GR650, X	83-85	YB14L-A2
	GS650EX	83-92	YB10L-A2
	GS650, E, G, GLX, GTZ	81-83	YB14L-A2
	LS650, F, P Savage	86-94	YB14L-B2
		95-01	YB14L-B2
		-03	YB14L-B2
	SV650, S	99-	YT12A-BS
	XF650 Freewind	97-99	YTX9-BS
		-02	YTX9-BS
	XN85 Turbo	83-92	YB14L-A2
700	GS700E, ES	85	YB14L-A2
	GV700GL Madura	85	YB14L-B2
	VS700GL Intruder	86-87	YB16B-A1
750	DR750S, SU Big	88-89	YB14L-B2
	GS750, D, E, ES, L, S, T	77-79	YB14L-A2
	GSX750	99-	
	GSX750, E, EF, ES, L	80-86	YB14L-A2
	GSX750EG Silver Suzi	80	YB14L-A2
	GSX750F Katana	89-97	YB14L-B2
	GSX750F, Katana	98-	YTX9-BS
	GSX750S Katana	82	YB14L-A2
	GSX-R750	00-	YT12A-BS
	GSX-R750	96-99	YTX9-BS
	GSX-R750	86-92	YB14L-A2
	GSX-R750, W	92-93	YTX12-BS
	GSX-R750, W	94-95	YTX9-BS
	GSX-R750	86-87	YB14L-A2
	GT750 Le Mans	73-77	YB14L-A2
	VS750GL Intruder	86-91	YB16B-A1
800	DR800S, SU Big	90-97	YTX14-BS
	DR800ST	92	YB14L-B2
	VL800 Intruder Volusia	01-04	YTX12-BS
	VS800GL Intruder	92-03	YB16B-A1
		-02	YB16B-A1
	VX800, U	96-97	YB16B-A1
	VZ800 Marauder	97-03	YTX12-BS
850	GS850G, GL, GT, GZ	79-86	YB14L-A2
	X1-E	92	6N4-2A
900	RF900R/RR	94-97	YTX9-BS
1000	DL1000	-02	YTX14-BS
	GS1000, E, G, GL, H, L, S	78-81	YB14L-A2
	GSX-R1000	01-	YTX12-BS
	GSX-R1000	05	YT12A-BS
	SV1000S	03-	YTX14-BS
	TL1000R, S	98-03	YT12A-BS
	TL1000S V	97-01	YTX12-BS
1100	GS1100G	91-95	YTX14-BS
	GS1100G Katana	84-86	YB14L-A2
	GS1100E, ES	80-83	SYB14L-A2
	GS1100, E, EF, ES, EX	80-86	SYB14L-A2
	GSX1100F Katana	88-94	YB14L-B2

C.C.	MODEL	YEAR	YUASA BATTERY
	SUZUKI		
1100	GSX1100G	91-92	YTX14-BS
	GSX1100L	80	SYB14L-A2
	GSX1100S Katana	82	SYB14L-A2
	GSX1100SZ	82	YB14L-A2
	GSX-R1100	87-92	YB14L-A2
	GSX-R1100W	93-99	YTX12-BS
1150	GS1150E, ES	83-86	SYB14L-B2
1200	Bandit1200S		YTX12-BS
	GS1200SS	-02	YTX12-BS
	GSF1200, S, SA Bandit	97-04	YTX12-BS
	GSX1200	99-00	YTX12-BS
	GV1200GL Marauder	85-86	YB14L-B2
1300	GSX1300R, Hayabusa	99-	YT12A-BS
1400	GV1400GC Cavalcade	86-88	SY50-N18L-AT
	VS1400GLF, GLP	88-03	YTX16-BS-1
	GSX1400	-02	YTX14-BS
1500	VL1500 Intruder	98-03	YTX16-BS-1
1600	Marauder	04	YTX20CH-BS
	YAMAHA		
50	Aero X	98	YB4L-B
	Aero X R, Max		YB4L-B
	Axis		YTX4L-BS
	Beluga		YB4L-B
	Breeze		YB4L-B
	BW ŝ Bump, Spy	99	YB4L-B
	BW ŝ Original	00	YB4L-B
	CA50, E Riva	83-84	6YB8L-B
	CE50S Riva	86-87	YB4L-B
	CG50	88-91	YB4L-B
	CR50, Z	89-93	YB4L-B
	Jog50Z		YT4B-BS
	STS/SS		YB4L-B
	CS50, Z	05	YTX4L-BS
	CV50	84	6YB8L-B
	CV50A, R, ZR	04	YTX4L-BS
	CW50, RS, RSX BW's	91-97	YB4L-B
	CW50 Zuma	89-90	YB4L-B
	CW50 Zuma ii	97-01	YB4L-B
	CW50L, N	04	YB4L-B
	CW50RSP NG	96-97	YB4L-B
	CY50, B, D, E, G, R, Z	89-95	YT4L-BS
	CY50 Riva Jog	92-01	YT4L-BS
	DT50 Enduro	88-90	6N4B-2A-3
	DT50, M	80-81	6N4A-4D
	DT50MX	82-87	6N4B-2A-3
	DT50R	89-97	YB3L-A
	EW50	05	YB4L-B
	EW50N	05	YB4L-B
	FS1-DX	75-79	6N4A-4D
	LB-2M Chappy	79	6N4-2A-4
	LB50P Chappy	78-82	6N4-2A-5
	LC50P Champ	80-81	6N4-2A-5
	MJ50 Towny	82	6N4-2A-5

C.C.	MODEL	YEAR	YUASA BATTERY
	YAMAHA		
50	NEO ’S	98	YB4L-B
	NG		YB4L-B
	Original		YB4L-B
	QT50 Yamahopper	79-87	6N4-2A-5
	RD50, DX, M	78-81	6N4A-4D
	RD50M	82	6N4B-2A-3
	RX50	83-84	6N4-2A-5
	Spy		YB4L-B
	SG50 Sting	84	YB2.5L-C
	SH50, E, D, M Riva	87-94	YB4L-B
	SH50 Riva Razz	87-01	YB4L-B
	Slider	00	YB4L-B
	TY50M	80	6N4A-4D
	TZR50		YT4L-BS
	V50D	93	YB2.5L-C-4
	XC50, -D	04	YTX5L-BS
	YA50R Axis	96-	YT4L-BS
	YA50T	93	YT4L-BS
	YB50	98	YT4B-BS
	YE50 Zest	93-97	YB4L-B
	YJ50R Vino/Vino Classic	01-03	YT4L-BS
	YM50 Breeze	95-96	YB4L-B
	YSR50	87-92	6N4-2A-5
	YQ50, L	05	YB4L-B
	YW50A Zuma	02-	YTX5L-BS
	YZ50, D, ZS		YT4B-BS
	Why	99	YB4L-B
60	JT2 Mini Enduro	72	6N2-2A-3
	RD60	73-75	6N4-2A-5
65	CW65	94	YB4L-B
80	CV80 Riva	83-87	6N11-2D
	DT80LC, LC Ⅱ	83-96	YB3L-B
	DT80 Mini Enduro	81-83	6N4-2A-5
	DT80MX, MXS	81-83	6N4-2A-5
	G6S, G6SB	70-71	6N4A-4D
	G7S	72	6N4A-4D
	GT1 Mini Enduro	73	6N4-2A-5
	GT80 Mini Enduro	74-80	6N4-2A-5
	FS 1DX80	80	6N4A-4D
	FS80SE	81	6N4A-4D
	LB80-2A	95	6N4-2A-5
	LB80 Chappy	76-78	6N4-2A-5
	RD80LC	82	6N4A-4D
	RD80LC Ⅱ	83-86	YB3L-B
	RD80MX	81-82	6N4B-2A-3
	RX80SE	82	6N4-2A-4
	SV80	88-90	12N7-3B
	TZR80, D	91-	YT4L-BS
	V80, D	93-94	6N4-2A-9
	YSR80, B, D	92	6N4-2A-5
	YE80 Zesyt	94-96	YB4L-B
	YG5T, YG5S	68-69	12N7-3B
90	CR90	91	YB4L-B
	HS1, HS1B	70-71	12N5.5-3B
	HT1, HT1B 90 Enduro	70-71	6N2-2A-3
	YA90	93-	YT4L-BS
	BW ’s100	99	YTX5L-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	YAMAHA		
90	TTR90E	04-	YT4B-BS
100	AG100E	93-	6N4-2A-2
	Aero X100	00	YTX4L-BS
	BW ’s100	99	YTX5L-BS
	DT100 Enduro	77-83	6N4-2A-5
	DT100 Enduro	74-76	6N4B-2A-3
	L5T,L5TA	69-70	12N7-3B
	LS2	72	12N5.5A-3B
	LT2,LT3 100 Enduro	72-73	6N4B-2A-3
	Neo ’s100	00	YTX4L-BS
	RS100	75-76	6N4A-4D
	RS100, DX	79-81	6N4-2A-4
	RS100T	95	6N4A-4D
	RXZ100S	95	6N4A-4D
	V100	93-94	YB3L-B
	V100E	93-94	YB5L-B
	YFA-1 Breeze	89-95	YB12C-A
	YL2C/CM	68	12N7-3B
	TQ100	01	YT4L-BS
	YT100 (Taiwan)	99	YTX5L-BS
	YW100		YTX5L-BS
105	T105E, SE		12N5-3B
110	V110, E	93-95	YB5L-B
	T110C		12N5-3B
115	AT115C		YB7B-B
	RT115	93	6N4-2A-2
	RTX115	93	6N4-2A-2
	AL115, C		YB5L-B
125	AS2C	69	12N5.5-3B
	AT1E, AT1B, AT1C		
	125 Enduro	69-71	12N7-3B
	AT2, AT3 125 Enduro	72-73	12N7-3B
	BL125 Beluga	85	YB7C-A
	DT125	74	6N4B-2A-3
	DT125 Enduro	74-76	12N7-3B
	DT125 Enduro	78-81	12N7-3B
	DT125LC	84-87	YB3L-B
	DT125R	88-96	YB3L-B
	DT125R E	93	YB3L-B
	Maxster125	00-	YB7L-B2
	NXC125	04-	YTX7A-BS
	RD125, DX	75-77	12N5.5-3B
	RD125LC	82	YB5L-B
	RS125		12N10-3B
	RX125	95	6N4B-2A
	SR125, T	93-95	12N7-3B
	SV125	90	12N14-3B
	TDR125, R	93-	YTX5L-BS
	Teo ’s		YB7L-B2
	TTR125E, -S, LES, LWE	04-	YTX4L-BS
	TW125	99-01	YB7C-A
	TW125	04	YTZ7S
	TZR125, R		YB5L-B
	XC125 Beluga	86-92	YB7C-A
	XC125 Riva	87-01	YB7C-A
	XC125 Cygus-X	04-	YTX7A-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	YAMAHA		
125	XC125R, T, TR Cygnus	93-	YTX7A-BS
	XC125 TR Cygnus R	00	YB7C-A
	XT125	82-83	6N4A-4D
	XTZ125E, K		YB5L-B
	XV125	97-	YB10L-A2
	XV125, S Virago	99	YB5L-B
	XVS125	-00	YB7L-B
	XVS125	01-04	YTZ7S
	YAS1/C	68	12N5.5A-3B
	YB125E, C, CE		YB5L-B
	YBR125ED	05	YB5L-B
	YP125R Majesky	99-	YB7L-B2
	YJ125T		YTX7A-BS
150	SR150	93-95	YB7-A2
	RX150	95	YB3L-B
	XC150 Fly One R	98	YTX7A-BS
	YP150	01	YB7L-BS
175	CT1, CT1B, CT1C		
	175 Enduro	69-71	6N2-2A-3
	CT2,CT3 175 Enduro	72-73	6N4B-2A-3
	DT175 Enduro	74-76	6N4B-2A-3
	DT175 Enduro	78-	6N6-3B-1
180	XC180, D, Z Riva	83-85	12N10-3B
	XC180 Cygnus	93	YB10L-A2
	RT180G	95	6N6-3B-1
185	SR185	81-82	YB7L-B
200	AG200E, F, G	93-	6N4B-2A-3
	BW200	86-88	YB7C-A
	CS3B, CS3C	70-71	YB9L-A2
	CS5	72	YB9L-A2
	DT200RE	93	YB3L-B
	RD200, DX	75-79	12N9-4B-1
	RD200	74-76	12N9-3A-1
	TW200	87-	YB7C-A
	XC200, Z Riva	87-91	YB10L-B2
	XT200	82-83	6N4A-4D
	YCS1	68	YB9L-A2
225	TTR225	99-03	YB7B-B
	XT225, E, EC, F, FG, G, GC	93-	YTX7L-BS
	XT225	01-03	YTZ7S
	XT225 Serow	92-00	YTX7L-BS
230	TTR230T	05	YTX5L-BS
250	CP250	05	YTZ10S
	DS6B, DS6C	69-70	
	DS7	72	
	DT1B, DT1C, DT1E	68	
	250 Enduro	69-71	
	DT2 250 Enduro	72	
	DT250 Enduro	77-79	6N6-3B-1
	DT250 Enduro	74-76	6N4B-2A-3
	DT250MX	77-81	6N6-3B-1
	DT3 250 Enduro	73	6N4-2A-5
	RD250, S	75-79	12N5.5A-3B

C.C.	MODEL	YEAR	YUASA BATTERY
	YAMAHA		
250	RD250LC	80-82	12N5.5-3B
	SR250, E, SE	80-	12N12A-4A-1
	SRV250, G	93-	YTX7A-BS
	SRX250	87	12N12A-4A-1
	TDR250	88-90	YB5L-B
	TT250	99-	YT7B-BS
	TTR250	05	YT7B-BS
	TZR250	89-90	YB5L-B
	WR250F, -S	03-	YTX5L-BS
	XG250	04-	YTZ7S
	XS250	77-80	YB12A-A
	XT250	84-	YB3L-B
		82-83	6N6-3B-1
	XV250, Route66	88-90	YB10L-A2
	XV250, H Virago	95-03	YB10L-A2
	XV250, N, L, S Virago	89-98	YB10L-A2
	XVS250, S	04	YTZ7S
	YP250 Majesty	00	YT7B-BS
	YP250 DX/ABS Majesty,	96-03	YT7B-BS
	YP250L, C	04-	YT9B-4
300	VP300	04-	YTX9-BS
350	BW350	87-88	YB12B-B2
	BW350E	86-88	YB7C-A
	R3	69	YB5L-B
	R5, R5B, R5C	70-72	12N5.5A-3B
	RD350	73-75	12N5.5A-3B
	RD350LC, LCF	80-84	12N5.5-3B
		85	YB5L-B
	RD350LC-FH, FN, H, N	86-90	YB5L-B
	RZ350	84-85	12N5.5-3B
	TT350E, F	93-94	6N2-2A
	XT350, H, N	85-00	YB3L-B
	YR2/C	68	12N5.5-3B
360	XS360	76-78	12N12A-4A-1
	XS360-2	77	12N7-3B
	DT360 Enduro	74	6N4B-2A-3
	RT1, RT1B, 360 Enduro	70-71	6N2-2A-3
	RT2, RT3, 360 Enduro	72-73	6N4-2A-5
	XS360	76-78	YB12A-A
	XS360-2	77	YB7L-B
400	DT400 Enduro	77-78	6N6-3B-1
	DT400 Enduro	75-76	6N4B-2A-3
	FZR400, S/U/W	88-90	YB12AL-A2
	FZR400RR, RRSP	92-	YTX9-BS
	RD400, S	76-79	12N5.5A-3B
	SR400		YT4B-BS
	XJR400R	04	YTX9-BS
	XS400 Maxim	77-83	12N12A-4A-1
	XS400R Seca	82-83	12N12A-4A-1
	XS400S Heritage Special	80-82	12N12A-4A-1
	XS400-2	78-79	12N12A-4A-1
	XV400	95	YB12AL-A
	XVS400, C	04	YT12B-BS
	YP400, Majesty	04-	YT9B-4
450	WR450F, -S	03-	YTZ7S

C.C.	MODEL	YEAR	YUASA BATTERY
	YAMAHA		
500	FXR500	93	YB12AL-A2
	RD500LC	84-85	12N5.5-3B
	SR500, SP	78-	12N7-3B
	SR500	98-	YT4B-BS
	XP500 (T-Max)	01-05	YT9B-4
	XS500E	75-78	12N14-3A
	XT500	83-85	6N6-3B-1
	XT500	86-89	YB3L-B
	XT500E	93-	YTX9-BS
	XV500 Virago83	83	12N12A-4A-1
535	XV535, H, N, S, SE Virago	87-99	YB12AL-A2
	XV535 DX Virago	87-99	YB12AL-A2
550	XJ550	81-83	12N12A-4A-1
	XT550	82-83	12N5-3B
	XZ550R Virago	82-83	YB14L-A2
600	FJ600	84-85	12N12A-4A-1
	FZ6, Fazer	04-	YT12B-BS
	FZ6-S, S, SC	04-	YT12B-BS
	FZ600	86-88	12N12A-4A-1
	FZR600	89-93	YB12AL-A
	FZR600, E, RE, REC	93	YB12AL-A2
	FZR600R	89-93	YB12AL-A2
	FZR600R	94-95	YTX12-BS
	TT600S	93	YT4L-BS
	TT600T	86-88	6N4-2A-7
	TT600W	86-92	6N4-2A-7
	FZS600 Fazer	98-03	YT12B-BS
	FZS600S Fazer	00-03	YT12B-BS
	SRX600, H, N	86-90	12N5-3B
	TT600E	94	YTX9-BS
	TT600R	99	w/o Battery
	TT600RE	04	YT9B-4
	XJ600, H, N	84-91	YB12A-A
	XJ600N	94-99	YTX9-BS
	XJ600S Diversion	92-02	YTX9-BS
	XT600E, EH, EN	91-02	YTX9-BS
	XT600E, EH, EN, H, N, Z	84-87	YB5L-B
	XT600KH	91-94	YT4L-BS
	XT600KH	94-95	YT4L-BS
	XT600Z	83-84	YB12AL-A2
		85	YB5L-B
	YX600 Radian	86-90	12N12A-4A-1
	YZF600FGC, RG	95-	YTX12-BS
	YZF600R Thunder Cat	96-	YTX12-BS
	YZF-R6, -S, -SC,	01-	YT9B-4
	YZF-R6	99-00	YT12B-BS
650	Burgman		YTX14-BS
	TX650	74	12N14-3A
	TX650	73	12N12A-4A-1
	XJ650, R	80-83	12N12A-4A-1
	XJ650T Turbo	81-83	12N12A-4A-1
	X1	70-71	12N5.5-3B
	X2	72	12N12A-4A-1
	XS650/SE	75-81	12N14-3A
	XS650-2	79	12N14-3A
	XS650S Heritage Special	78-83	12N14-3A
	XVF600RT, C	05	YTX12-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	YAMAHA		
650	XVS650 Drag Star	97-	YT12B-BS
	XVS650A Drag Star Cla.	99-	YT12B-BS
660	Burgman		YTX14-BS
	SZR660	96-98	YTX9-BS
	XT660R, X	04-	YT9B-4
	XTZ660 Tenere	91-97	YTX9-BS
700	FZ700	87	YB14L-A2
	FZX700 Fazer	86-87	YB14L-A2
	XJ700 Maxim	85-86	YB14L-A2
	XJ700X/S/XS	86	YB14L-A2
	XV700 Virago	84-87	YB16AL-A2
	XV700C	86-87	YB16AL-A2
	XV700SS	86	YB16AL-A2
750	FX750	85-91	YB14L-A2
	FZ750 Genesis	85-94	YB14L-A2
	FZR750	91-	YTX9-BS
		88-90	YB14L-A2
	FZR750RT Genesis	88	YB14L-A2
	FZX750 Fazer	87-94	YB14L-A2
	TX750	73-74	YB16L-B
	XJ750 Maxim/K	82-83	YB14L-A2
	XJ750M Midnight Virago	83	YB14L-A2
	XJ750 Seca	82-83	YB14L-A2
	XS750, S, SE	78-80	12N14-3A
	XS750-2	77	12N14-3A
	XTZ750, H, N Sup. Tenere	89-97	YB14L-A
	XV750SE, Virago	81-97	YB16AL-A2
	YZF750R, SP	93-97	YTX12-BS
	YZF-R7, owo2	99	YT9B-4
850	TDM850, N	91-95	YTX12-BS
		96-01	YT12B-BS
	TRX850	96-99	YTX12-BS
	XS850	80-81	YB14L-A2
900	TDM900, A	04-	YT12B-BS
	XJ900, F	83-87	YB14L-A2
		90-91	YB14L-A2
	XJ900R Seca	83-92	YB14L-A2
	XJ900S Diversion	95-02	YTX14-BS
920	XV920 Virago	83	Y50-N18L-A
		82	SY50-N18L-A
	XV920M Midnight Virago	83	Y50-N18L-A
	XV920R Virago	81-82	Y50-N18L-A
1000	FZR1000 Genesis	87-91	YB14L-A2
	FZR1000 Exup	89-91	YB14L-A2
	FZR1000 Exup	92-95	YTX14-BS
	FZS1000	01-03	YT14B-4
	FZS1000, S, T, FZ1	04-	YT14B-4
	GTS1000, A	93-97	YTX14-BS
	XV1000TR.1	-92	Y50-N18L-A
	XV1000SE Midnight Sp.	83	Y50-N18L-A
	XV1000SE Virago	86-87	Y50-N18L-AT
	YZF1000R Thunderace	96-01	YTX14-BS
	YTZF-R1	04-	YTZ10S
	YZF-R1	98-03	YT12B-BS

YAMAHA

C.C.	MODEL	YEAR	YUASA BATTERY
1100	BT1100	02-	YT14B-4
	FJ1100	84	12N14-3A
	FJ1100	85-92	YB14L-A2
	XJ1100 Maxim	82	SY50-N18L-A
	XS1100, S	78-92	Y50-N18L-A
	XS1100L	80-81	Y50-N18L-A
	XV1100	89-98	SY50-N18L-A
	XV1100 Virago	86-	SY50-N18L-AT
	XV1100G, GC	95	Y50-N18L-A
	XVS1100 V-Star	99-	YT14B-4
	XVS1100 Drag Star	99-	YT14B-4
	XVS1100A Drag Star	01-	YT14B-4
1200	FJ1200	86-90	YB14L-A2
	FJ1200, A	91-93	YTX14-BS
	VMX1200 V Max	85-	YB16AL-A2
	XJR1200, SP	95-98	YTX14-BS
	XVZ12 Venture Royal	83-85	SY50-N18L-AT
1300	FJR1300, A, AS, S, SC	01-	YT14B-4
	XJR1300, SP	99-	YT14B-4
	XVZ1300 Venture Royal	86-93	SY50-N18L-AT
	XVZ1300 TD	89-91	SY50-N18L-A
	XVZ1300A Royal Star	96-	YTX20L-BS
	XVZ1300 AT Tour Classic	99-	YTX20L-BS
	XVZ1300TF Royal Star	00-	YTX20L-BS
1600	XV1600, Road Star	99-03	YTX20L-BS
	XV1600A Wild Star	00-	YTX20L-BS
1700	XV1700PC	02-	YT14B-4
	XV1700AT		YTX20L-BS
	MT-01	05	YT14-B4

AERMACCHI

125	SX		12N7-3B
175	SX		12N7-3B
250	Ala Azzurra/Bianca		6N11A-1B
	Ala Oro/Rossa/Verde		6N11A-1B
	Chimera		B39-6
	SX		12N7-3B
350	Ala Azzurra/Bianca		6N11A-1B
	Ala Oro/Rossa/Verde		6N11A-1B

APRILIA

50	AF-1 Futura/Europa	87-94	YB4L-B
	Amico GL/LK/LX/Sport	92-97	YB4L-B
	AREA51	00	YB4L-B
	Classic50	-97	YB4L-B
	ET		YB4L-B
	Gulliver AC/LC	-97	YB4L-B
	Habana, Custom	99	YB4L-B
	H2O	00-	YB4L-B
	LC		YB4L-B
	Mc Gulliver	00	YB4L-B
	Mojito		YB4L-B
	MX50		YB4L-B
	Pegaso	00-	YB4L-B
	Rally AC/LC	-97	YB4L-B
	Red Rose/Classic	-97	YB4L-B

APRILIA

C.C.	MODEL	YEAR	YUASA BATTERY
50	Replica	00-	YB4L-B
	RS50/Extrema	-97	YB4L-B
	RX-50	-93	YB4L-B
	Scarabeo 2T	97-	YB4L-B
	Scarabeo 4T	03-	YB9-B
	Scarabeo Diech	02-	YTX5L-BS
	Sonic	00-	YB4L-B
	Sonic, GP	99	YB4L-B
	SR Ditech	01-	YTX5L-BS
	SR LC/Netscaper	-97	YB4L-B
	SR Netscaper	00-	YB4L-B
	SR Replica/Racing	-97	YB4L-B
	SR Stealth/WWW	-97	YB4L-B
	SR Urban/Viper		YB4L-B
	Tuareg Rally/Wind	-97	YB4L-B
100	Scarabeo 2T	00	YTX5L-BS
	Scarabeo 4T	00-	YB9-B
125	AF-1 Futura/Europa	-94	YB9-B
	AF-1 Project108/Replica	-94	YB9-B
	AF-1 Sintesi/Sport Pro	-94	YB9-B
	AS R		12N5.5-3B
	Atlantic		YB12AL-A
	Classic		YB9-B
	ETX Kick Starter		12N5.5-3B
	ETX E-Starter		YB9-B
	Habana, Custome		YTX9-BS
	Leonardo	96-01	YB12AL-A
	MX125		YB4L-B
	Mojito		YTX7L-BS
	Pegaso	-95	YB9-B
	Red Rose/Classic	-97	YB9-B
	RS125	95-	YB9-B
	RS Replica	-93	YB9-B
	RS Extrema, RX	-97	YB9-B
	Scarabeo125	99-	YB12AL-A
	Sport city		YT12B-BS
	SR125	99	YTX7L-BS
	ST, STX Kick Starter		12N5.5-3B
	ST, STX E-Starter		YB9-B
	ST/STX/ETX		12N5.5-3B
	Tuareg Kick Starter		12N5.5-3B
	Tuareg E-Starter		YB9-B
	Tuareg Rally	-86	6N4-2A-4
	Tuareg Rally	87	YB2,5L-C2
	Tuareg Rally/Wind	87-94	YB9-B
	Tuono		YB9-B
150	Leonardo	99-02	YB12AL-A
	Scabeo150	99	YB12AL-A
	SR150	00	YTX7L-BS
200	Atlantic		YB12AL-A
	Scarabeo	00-	YB12AL-A
	Sport city		YT12B-BS
250	ETX Kick-Starter		12N5.5-3B
	ETX E-Starter		12N14-3A
	Leonardo, ST SP	99-	YB12AL-A
	RS Replica		YB4L-B
	RS250	95-	YB4L-B
	Scarabeo		YB12AL-A
	Atlantic		YB12AL-A
300	Leoardo		YB12AL-A
350	ETX Kick-Starter		12N5.5-3B

C.C.	MODEL	YEAR	YUASA BATTERY
	APRILIA		
350	ETX E-Starter		YB14L-A2
	Tuareg Wind	88-94	YB9-B
	Tuareg Wind	87-88	YB14L-A2
450	Motard		YTX7A-BS
	Enduro		YTX7A-BS
500	Atlantic	03-	YB14L-A2
	Atlantic		YTX12-BS
	Scarabeo		YB14L-A2
550	Motard		YTX7A-BS
	Enduro		YTX7A-BS
600	ETX Kick Starter		12N5.5-3B
	ETX E-Starter		YB14L-A2
	Pegaso	88-94	YB14L-A2
	Tuareg Wind	87-91	YB14L-A2
650	ETX Kick-Starter		12N5.5-3B
	ETX E-Starter		YB14L-A2
	Moto 6.5	95-99	YB12AL-A2
	Pagaso	94-96	YB14AL-A2
	Pegaso/IE	97-02	YB12AL-A
	Pegaso Strada	05-	YTX12-BS
	Stark	00-	YB14L-A2
1000	ETV, Caponord	02-03	YTX14-BS
	RST Futura	01-	YTX12-BS
	RSV1000 Mille SP	99	YTX12-BS
	RSV1000 Mille R	00-03	YTX12-BS
	RSV1000 Mille	01-	YTX12-BS
	RSV1000 Mille	00	YTX14-BS
	SL1000 Falco	00-03	YTX14-BS
	Tuono Fighter	03-	YTX12-BS
	BENELLI		
50	Devil E-Starter	94-95	YB4L-B
	KBX Race	94	YB4L-B
	K2	97	YB4L-B
	Scooty LX/DLX	94	YB4L-B
	Pepe	00	YB4L-B
	491GT/Sport/Racing	-97	YB4L-B
80	Devil	94-95	YB4L-B
	KBX	94	YB4L-B
100	K2	00-	YB5L-B
125	666	97	
	Adiva	00	YTX14-BS
	Jarno E-Starter	00	12N9-4B-1
	Velvet	00	YTX9-BS
150	Adiva150	00	YTX14-BS
	Velvet	00	YTX9-BS
250	4 Zyl. (Cyld.)		YB12A-A
	TS250		6N11A-1B
	Velvet	00	YTX12-BS
254	4 Zyl. (Cyld.)		YB9-B
350	350RS	00	Y60-N24AL-B
354	4 Zyl. (Cyld.)		YB14L-A2
500	LS		YB14L-A2
	Quattro	00	Y60-N24AL-B
	SS	00	12N12A-4A-1
504	4 Zyl. (Cyld.)		YB14L-A2
750	Sei	00	YB14L-A2
	SS	00	12N12A-4A-1
900	Tornado		12N12A-4A-1
	Sei		Y60-N24AL-B
	BETAMOTOR		
50	Adventure		YB4L-B

C.C.	MODEL	YEAR	YUASA BATTERY
	BETAMOTOR		
50	Ark Air/Ark Lc	-97	YB4L-B
	Chrono	95	YB4L-B
	Eikon	00	YB4L-B
	Quadra	-97	YB4L-B
	Tempo		YB4L-B
125	Eikon	00-	YTX9-BS
150	Eikon	00-	YTX9-BS
600	YB9	00-	YB12AL-A2
750	SB3	00-	12N14-3A
900	HS2900	00-	YB14L-A2
1000	YB10 Dieci	00-	YTX14-BS
	YB6		YB14L-A2
	BIMOTA		
600	YB9		YB12AL-A2
750	SB3		12N14-3A
900	HS2900		YB14L-A2
1000	YB10 DIECI		YTX14-BS
	YB6		YB14L-A2
	Gobert		YB14L-A2
	Santamonica		YB14L-A2
	Tesi 2d		YB14L-A2
	BMW		
125	C1	00-	YB14L-A2
150	C1	00-	YB14L-A2
200	C1	00-	YB14L-A2
250	R25/2/3		B49-6
260	R26		B39-6
	R27		6N11A-1B
450	R45N	78-88	51814
500	R50/R 50S/R 50-2/		
	R50-5	00-	51814
	R51/R51-2-3	00-	B49-6
600	60-5	00-	51814
	R60S	00-	12N14-3A
	R60LS	00-	51814
	R60/6, R60/7	-84	Y60-N24AL-B
650	F650	93-01	YB12AL-A
	F650, S	93-	52515
	F650CS/GS/ST	98-'02	YB12AL-A
	R65	85-	52515
	R65LS	81-85	51814
	R65/GS	86-92	51814
	R69S		B49-6
750	K75	85-86	51814
	K75	87-92	52515
	K75	93-95	51913
	K75C	85-86	51814
	K75C	87-93	52515
	K75, -S, -RT,RTJ		52515
	K75RT	92-96	51913
	K75S	85-86	51814
	K75S	87-92	52515
	R75/6, R75/7	-84	Y60-N24AL-B
	R75-5 (Bicylinder)	00-	51814
	R75-6	00-	53030
800	R80	86-92	52515
	R80 G/S	81-86	51814
	R80 G/S	90-95	52515
	R80R	91-95	52515
	R80/7, R80RT	-84	Y60-N24AL-B
	R80, R80RT	85-	52515

C.C.	MODEL	YEAR	YUASA BATTERY
	BMW		
800	R80ST	86-90	51814
	R80GS	88-	52015
	R80ET	00-	53030
850	R85C	99-01	51913
	R85R/RT/GS, R259	01	51913
900	R90/6, R90S	-84	Y60-N24AL-B
	R90ST	00-	51814
1000	BMW K1	89-92	52515
	BMW K1	93	51913
	K100	83-94	52515
	K100LT/RS	83-91	52515
	K100RT	83-93	52515
	R100GS, -Basic, -Mystic	90-95	52515
	R100 CS, RS, RT, S, T	-84	53030
	R100, -CS	80-84	52515
	R100PD	90-95	52515
	R100RT, R100RS	87-94	52515
	R100R	00-	51913
	R100R	91-95	52515
	R100RM	91-95	52515
1100	K1100-LT	93-98	51913
	K1100RS	93-96	51913
	R1100GS	94-98	51913
	R1100R, LT, RS. RT	94-01	51913
	R1100S	99-02	51913
1150	R1150 GS	00-02	51913
	R1150R/RS/RT	01-02	51913
1200	K1200 Cruiser	98-02	51913
	K1200GT		51913
	K1200LT	97-02	51913
	K1200RS	97-02	51913
	K1200S	05	51913
	BSA		
	250, 350, 650 (6V)		B39-6
	250, 350, 400, 441 (12V)		12N7-4A/YB7-A
	500 Gold Star		B38-6A
	500, 600, 650, 750 (12V)		12N7-4A/YB7-A
	Rocket 750, Thunderbolt		YB9L-B
	Spitfire HK35, Starfire B25		YB9L-B
	BSV		
50	GP Dio, Sp Dio		YTX4L-BS
	GZ		YTX4L-BS
	ZX	94-95	YTR4B-BS
100	R100 S	77-79	Y60-N24AL-B
	R100 T	78-81	Y60-N24AL-B
	R100 T	78-81	Y60-N24AL-B
	CAGIVA		
50	City, Lucky, Explorer	94-97	YTX4L-BS
	Cucciolo, Mito	98	YB4L-B
	Cocis, Prima, Supercity		YB5L-B
	K3, W4	98	YB4L-B
	Muntis50	99	
	Progress, Corsa50	98	
	Prima		YB5L-B
125	Aletta Oro Kick Starter		12N5.5-4A
	Aletta Oro El.-Starter		YB12A-A
	Blues, Elefantre		YB12A-A
	Crouser, CUCC125	87-88	YB9-B
	Cuccido		YB9L-A2

C.C.	MODEL	YEAR	YUASA BATTERY
	CAGIVA		
125	Elefant, SST, WSXT		12N5.5-4A
	EV		YB9-B
	Freccia C9, /C10R, /C12R	87-90	YB9-B
	K7, Passing		YB4L-B
	Mito, -2, Replica, Ev.	-98	YB9-B
	Mitto125, R	94-97	YB9-B
	N90	97	YB9-B
	Planet	98	YB9-B
	Roadster	94-97	12N5.5-4A
	SM125	-00	YTX5L-BS
	SST		12N5.5-4A
	SST Electra		YB12A-A
	Supercity	91-97	YB9-B
	SXT		12N5.5-3B
	Tamanaco		YB9-B
	W8	ic	YB4L-B
	Wre125	-00	YTX5L-BS
	WSXT (Aletta Rossa)		12N5.5-4A
200	Elefant		12N5.5-4A
	Roadstar	95	YB9-B
250	SST, SX		12N7-3B
300	Elefant 2 Cyl.	86-	YB14L-A2
	T4 Ala Rossa		12N5.5-4A
	T4 E Elefant, W12	93-97	YB14L-A2
	T4 R	87-	YB3L-A
	SST, SX		12N7-3B
	W12		YB14L-A2
500	Canyon, River	98-01	YTX14-BS
	T4 E Elefant	88-	YB14L-A2
600	W16	94-97	YB14L-A2
	Canyon, River	95-96	YB14L-A2
	Canyon, River	96-97	YB16AL-A2
650	Elefant	86-	YB14L-A2
	Raptor650	03-04	YTX9-BS
	Raptor/V Raptor	00-02	YTX12-BS
750	Elefant	94-97	YB14L-A2
	Elefant Bifaro	89-	YB14L-A2
900	Elefant, AC	93-96	YB16A-B
	E900	94-97	YB16AL-A2
	Canyon I.E.	98-00	YB16-B
	Gran Canyon	99	YB16-B
	I.E. GT	91-93	YB16A-B
1000	Canyon I.E.	97-	YB16-B
	Gran Canyon		YTX14-BS
	I.E. GT	91-93	YB16A-B
	Navigator	00-02	YB16-B
	Raptor/V Raptor	00-02	YTX12-BS
	V Raptor	03-04	YTX9-BS
	DERBI		
50	Atlantis	99	YB4L-B
	Aventura, Furax, Hunter	96-97	YB4L-B
	Bullet Atlantis Race	03-	YB4L-B
	Easy50	97	YB4L-B
	Fenix	94	YB4L-B
	Furax	96	YB4L-B
	GP-1	03-	YB4L-B
	GPR-50R		YB4L-B
	Hunter	97-	YB4L-B
	Paddock	97-	YB4L-B
	Predator/LC, O2	99	YB4L-B
	Senda-L, Senda-R	94-	YB4L-B
	Sport	97	YB4L-B
	Vamos	93-	YB4L-B

C.C.	MODEL	YEAR	YUASA BATTERY
	DERBI		
50	Variant, GS	97	YB4L-B
125	Boulevard125		YB9L-A2
150	Boulevard150		YB9L-A2
	DUCATI		
75	Cross		B38-6A
	Six Days		6N4-2A-4
175	Cross		B38-6A
129	Aurea		B39-6
200	Motocarro		12N24-3A
250	Cross		B38-6A
350	Alazurra	87-	YB14L-A2
	Cross		B38-6A
	GTL, GTV Sport		Y50-N18L-A
	F3	87-	YB14L-A2
	Indiana, Pantah, XL		YB14L-A2
	Mark3, Scrambler		B38-6A
	Sport		Y50-N18L-A
	SS Supersport	93-	YB16AL-A2
	Vento		YB12A-A
400	Alazurra, F3	87-	YB14L-A2
	SS Supersport	91-99	YB16AL-A2
	TS		B38-6A
500	GTL, GTV		Y50-N18L-A
	Pantah		YB14L-A2
	Sport		Y50-N18L-A
600	Monster	94-00	YB16AL-A2
	Monster	01	YT12B-BS
	M Chromo	98	YB16AL-A2
	M City/M Dark/M Drak City	98-00	YB16AL-A2
	M Dark	01	YT12B-BS
	Pantah		YB14L-A2
	SS Supersport	94-98	YB16AL-A2
	TL		YB14L-A2
620	Monater/IE/S IE/Sport	02-03	YT12B-BS
650	Alazurra, Indiana, Pantah		YB14L-A2
748	Biposto	01-03	YT12B-BS
	Strada, Biposto, SP, SPS		YB16AL-A2
	S R	01-02	YT12B-BS
750	F1, Montijuich, Paso	87-91	YB14L-A2
	GT, Luguna Seca		Y60-N24AL-B
	Indiana		YB14L-A2
	Monster	95-00	Not available
	Monster	01	YT12B-BS
	M City/M Drark/M Dark City	99-00	YB16AL-A2
	M Drark	01	YT12B-BS
	M IE/M IE Dark	02	YT12B-BS
750	New Monster		YT12B-BS
	Paso/F1	87-90	YB14L-A2
	Sport	89-90	YB16AL-A2
	Sport	01-02	YT12B-BS
	SS Supersport Kick-Str.		YB12A-A
	SS IE	00	YB16AL-A2
	SS IE	01-02	YT12B-BS
	SS Veloce	98	YB16AL-A2
800	Monster S	03-	YT12B-BS
	Monster SR2	05	YT12B-BS
	Superssports		YT12B-BS
850	Electric		Y60-N24L-A
851	Biposto/SP2/SPORT	89-90	YB16AL-A2
	Strada	89	YB16AL-A2
	Superbike	90-91	YB16AL-A2
	Superbike, Strada		YB16AL-A
860	GT, GTS		Y60-N24AL-B

C.C.	MODEL	YEAR	YUASA BATTERY
	DUCATI		
860	Kick-Starter		YB12A-A
888	SP, SP Ⅱ, SP Ⅳ, SP Ⅴ	90-94	YB16AL-A2
	Strada	91-94	YB16AL-A2
900	M Chromo	98-00	YB16AL-A2
	M Chromo	01	YT12B-BS
	M City/M Dark/M Dark City	99-00	YB16AL-A2
	M Dark	01	YT12B-BS
	M IE2/M IE DARK2	02	YT12B-BS
	M Metallic	00	YB16AL-A2
	M Metallic/M S	01	YT12B-BS
	M Special	98-00	YB16AL-A2
	Monster, Superlight	-99	YB16AL-A2
	Monster	00-	YT12B-BS
	SD Darmah		Y60-N24AL-B
	Sport	02	YT12B-BS
	SS Kick-Starter	-81	YB12A-A
	SS Replica	-81	12N12A-A4-1
	SS Supersport, Replica	82-	YB14L-A2
	SS (avviamento pedale)		12N12A-A4-1
	SS	89-00	Not available
	SS IE	00	YB16AL-A2
	SS IE	01-02	YT12B-BS
	SL	92-96	YB16AL-A2
	Supersport FE	-99	YB16AL-A2
904	Supersport900	99	YB16AL-A2
906	Paso	90-92	YB16-B
	Paso	89-94	YB14L-A2
907	I.E. Paso	90-94	YB16-B
916	Biposto, Senna, Strada	95-98	YB16AL-A2
	I.E., SP, SP S	94-98	YB16AL-A2
	Monster S4	81-83	YT12B-BS
	ST4	01-	YT12B-BS
	ST4	00	YB16AL-A2
944	Sport Touring2	97-00	YT16AL-A2
	ST2	01-03	YT12B-BS
992	ST3		YT12B-BS
996	Monoposto	99-00	YB16AL-A2
	Monoposto, Bistro, S	01-	YT12B-BS
	Sport Touring4S	01-	YT12B-BS
	SPS/SPS2	99-00	YB16AL-A2
	ST4S ABS	01-	YT12B-BS
998	Monoposto/S/Biposto	02-03	YT12B-BS
	ST4	01-	YT12B-BS
998	998, 999, R, S	02-03	YT12B-BS
1000	Monster S4	03	YT12B-BS
	Multistrada	03	YT12B-BS
	Supersport HF	03	YT12B-BS
	FANTIC MOTOR		
50	Alien	97-	
	Extra	97-	
	Grinta	95-96	YT4L-BS
	HP1		YB4L-B
	Koala	93-97	YB4L-B
	Leader	95	YT4L-BS
	Oasis		YB4L-B
	Oasis EPV		12N5.5-3B
	Pony, SR	95	YB4L-B
	Queenie	95	YT4L-BS
	TX220		B39-6
80	Clubman	-97	
	Koala	93-96	YB4L-B
125	Clubman	97-	
	Extra	97-	

C.C.	MODEL	YEAR	YUASA BATTERY
	FANTIC MOTOR		
125	Hit	94	
	Raider LC		YB3L-A
	Strada-Sport	85	6N4B-2A
250	Raider LC		YB3L-A
	GARELLI		
50	Big Racing	94	YB4L-B
	Big Wheel	94-95	YB4L-B
	Grinta	95-96	YT4L-BS
	Noi		YB4L-B
	Pony, Pony SR	94-95	YB4L-B
	Queenie	95	YT4L-BS
	Sahel, Team, Urka		YB4L-B
	XLE Tiger		YB4L-B
125	GTA Kick-Starter		YB5L-B
	GTA El.-Starter		YB9-B
	TSR		12N7-4B
	XR Tiger Kick-Starter		YB5L-B
	XR Tiger El.-Stater		YB9-B
	GAS GAS		
250	Pamera	97	YTX4L-BS
320	Pamera	98-01	YTX4L-BS
370	Pamera	96-01	YTX4L-BS
	GILERA		
50	Bullit, Easy Moving, Runner	-97	YB4L-B
	DNA		YTX4L-BS
	Eaglet	95-97	YB4L-B
	Easy Moving		YB4L-B
	GSA El.-Starter		YB4L-B
	Ice		YTX4L-BS
	Runner	02-	YTX4L-BS
	Runner Purejet	02-	YB9-B
	Runner/SP	-97	YB4L-B
	Sioux El.-Starter		YB4L-B
	Stalker, Storm, Top Rally		YB4L-B
	Top Rally		YB4L-B
	Typhoon, X	-97	YB4L-B
	503		YB4L-B
125	Apache Kick-Starter		12N5.5-3B
	Apache El.-Starter		YB9-B
	Arizona Kick-Starter		12N5.5-3B
	Arizona El.-Starter		YB9-B
	Crono Kick-Starter		12N5.5-3B
	Crono El.-Starter		YB9-B
	Coguar	99	YB9-B
	CX Kick-Starter		12N5.5-3B
	CX El.-Starter		YB9-B
	DNA		YB10L-B
	Fast Bike Kick-Starter		12N5.5-3B
	Fast Bike El.-Starter		YB9-B
	Freestyle Kick-Starter		12N5.5-3B
	Freestyle El.-Starter		YB9-B
	FX125 PD	99	
	GFR Kick-Starter		12N5.5-3B
	GFR El.-Starter		YB9-B
	GR1		6N11A-3A
	KK, KZ Kick-Start		12N5.5-3B
	KK, KZ E-Starter		YB9-B
	MX1, MXR Kick-Starter		12N5.5-3B
	MX1, MXR El.-Starter		YB9-B

C.C.	MODEL	YEAR	YUASA BATTERY
	GILERA		
125	Nebraska Kick-Starter		12N5.5-3B
	Nebraska El.-Starter		YB9-B
	R1, R1S Kick-Starter		12N5.5-3B
	R1, R1S El.-Starter		YB9-B
	RC Rally		YB10L-B
	RTX, RV, RX Kick-Starter		12N5.5-3B
	RTX, RV, RX El.-Starter		YB9-B
	Runner FX, SP		YB9-B
	Runner VX4T		YT12B-BS
	RV (E-Starter)		YB9-B
	RV (Kick-Starter)		12N5.5-3B
	RTX (E-Starter)		YB9-B
	RTX (Kick-Starter)		12N5.5-3B
	SP01,SP02 Kick-Starter		12N5.5-3B
	SP01,SP02 El.-Starter		YB9-B
	TG1		6N11A-3A
	TOP Rally Kcik-Starter		12N5.5-3B
	TOP Rally El.-Starter		YB9-B
	Typhoon		YB7-A
	X		YB9-B
	XR1, XR2 Kick-Starter		12N5.5-3B
	XR1, XR2 El.-Starter		YB9-B
180	Runner FXR, SP		YB10L-B
	Runner SP	99	YTX12-BS
	Runner VXR4T		YT12B-BS
200	Arizona EI-Starter		12N5.5-3B
	Arizona Kick-Starter		YB9-B
	Fast Bike EI-Starter		12N5.5-3B
	Fast Bike Kick-Starter		YB9-B
	RTX, RV, RX Kick Starter		12N5.5-3B
	RTX, RV, RX El.-Starter		YB9-B
	T4	79	12N5.5-3B
	Motocarro		B38-6A
	RV EI-Starter		YB9-B
	RV Kick-Starter		12N5.5-3B
250	Arizona Rally		YB10L-B
	RV NGR Kick-Starter		12N5.5-3B
	RV NGR El.-Starter		YB10L-B
350	Dakota Kick-Starter		12N5.5-3B
	Dakota El.-Starter		YB10L-A2
	ER Kick-Starter		12N5.5-3B
	ER El.-Starter		YB10L-A2
	XRT		YB14L-A2
500	Dakota Kick-Starter		12N5.5-3B
	Dakota El.-Starter		YB10L-A2
600	Nordwest	93	YB14L-A2
	RC600C	93	YB14L-A2
	Top Rally, XRT		YB14L-A2
	HEINKEL		
	Scooter Tourist		6N11A-3A
	150, R103, Tourist 103A/Z		6N11A-3A x 2pcs.
	HERCULES (SACHS)		
50	CV City		6YB8L-B
	FOX	93	YB5L-B
	Gipsy	95	YB4L-B
	KX5	93-97	YB4L-B
	Limbo L, M, MA, ML	95-97	YB4L-B
	Reggage, Reggage, Splinter	96-97	YB4L-B
	Squab	97	
	Samba, Swing	94-97	YB4L-B
	Ultra		12N9-3B

C.C.	MODEL	YEAR	YUASA BATTERY
	HERCULES (SACHS)		
50	ZX	95-97	
80	CV City		6N11-2D
	RX 9		YB5L-B
	SR Samba	94-96	YB5L-B
	Ultra AC, F, RS		12N9-3B
125	125E		6N11A-1B
	K103, K105X		6N11A-1B
	K125 S-RT, T-RT		6N11A-1B
	K125X Military		6N11A-1B
	SR125 Samba	94-97	YB5L-B
	ZX	97	
	W2000 Wankel		YB18L-A
	HMZ		
50	Cab	96	YT4L-BS
125	Cruise	96	
	HUSABERG		
450	FE450e/6		YTZ7S
	FS450e/6		YTZ7S
550	FE550e/6		YTZ7S
650	FE650e/6		YTZ7S
	FS650e/6		YTZ7S
	HUSQVARNA		
125	SM125S		YTX4L-BS
	WRE125		YTX4L-BS
450	SM450R		YTX4L-BS
	TE450		YTX7L-BS
			YTX4L-BS
610	SM610S	99-	YTX7L-BS
	TE610	98-	YTX14-BS
			YTX14-BS
	INNOCENTI		
125	Lambretta LI/DL		6N11A-3A
150	Lambretta LI/DL		6N11A-3A
175	Lambretta LI/DL		6N11A-3A
	Lambro FL1		Y60-N24L-A
200	Lambro FL1		Y60-N24L-A
450	Lambro		Y60-N24L-A
550	Lambro		Y60-N24L-A
600	Lambro		Y60-N24L-A
	ITALJET		
50	Adly		YB5L-B
	Bazooka, 2		YB4L-B
	Cruise		YB4L-B
	Formula	95-97	YB4L-B
	Pista		YB4L-B
	Reporter		YB4L-B
	Dragster	97	YB4L-B
	Formula	97-	YB4L-B
	Scoop		YB4L-B
	Torpedo	97-	YB4L-B
	Velocifero	95-	YB4L-B
125	Dragster	99	YB10L-B
	Formula	97-	YB9-B
	Millenium		YTX7A-BS
	Torpedo	99	YB9-B

C.C.	MODEL	YEAR	YUASA BATTERY
	ITALJET		
150	Millenium		YTX7A-BS
	Torpedo		YB9-B
180	Dragster	99	YTX14-BS
	JAWA		
	360, 361		B38-6A
	623, 633		B38-6A
	KL-SHELUNG		
50	Club		YTX4L-BS
	Racer		YTX4L-BS
	KREIDLER		
80	Florett		YB7L-B
125	Mustang		YB7L-B
	KTM		
50	GO, Go Chrono	95-	YT4L-BS
	Kross		YB4L-B
80	80 Chopper, PL		12N9-4B-1
	80RLW, RSL,		12N9-4B-1
125	125LC2	96-97	YT4L-BS
	Sting	97-98	YT4L-BS
250	EXC Racing	03-	YTZ5S
		05-	YTX5L-BS
400	EXC Racing	03-	YTZ5S
		05-	YTX5L-BS
	LC4	98	YTX9-BS
	LC4-E	97	YTX9-BS
	LS-E	97	YTX9-BS
450	EXC Racing	03-	YTZ5S
		05-	YTX5L-BS
	MXC Racing	00-02	YTX5L-BS
500	500K4, LC		YB9-B
520	E/XC520 Racing 4S	00-	YT4L-BS
525	EXC Racing	03-	YTZ5S
		05-	YTX5L-BS
	MXC Racing	00-	YTX5L-BS
	MX Desert Racing	03-	YTZ5S
550	LC		12N9-4B-1
625	Adventure	03-	YTZ10S
	Adventure R	00-	YTX9-BS
	Supercomp	98	YTX9-BS
	SMC	03-	YTZ10S
	All SM	03-	YTZ10S
	SXC	05-	YTZ10S
640	LC4	-99	YTX9-BS
	LC4	03-	YTZ10S
	Duke, E	96-97	YTX9-BS
	Duke Ⅱ	-99	YTX9-BS
	Duke Ⅱ Schwarz	03-	YTZ10S
950	Adventure	03-	YTZ14S
	Supermoto	03-	YTZ14S
	LAVERDA		
125	CU Rider		12N5.5-3B
	GS Lesmo		12N5.5-3B
	125LB		12N5.5-3B
	125LZ (Zundapp)		6N11A-1B
	Phoenix		

C.C.	MODEL	YEAR	YUASA BATTERY
	LAVERDA		
150	Phoenix		YTX9-BS
200	Phoenix		YTX9-BS
350	350		52015
500	500		52015
600	OR Atlas		YB14L-A2
650	Ghost, Strike		YB14L-A2
668	DIAMANTE, GHOST	-99	51814
	GHOST LEGGEND, STRIKE	-99	51814
750	750GTL, SFC, S	-99	51814
	CARENATA,DIAMANTE	-99	51814
	Formula		YB4L-B
	GHOST STRIKE, FORMULA	-99	51814
	SF/SFC/GTL/GTS		12N24-3A
	Strike		12N24-3A
1000	1000RGS		Y60-N24AL-B
	SFC1000		
1200	1200		Y60-N24AL-B
	MAICO		
125	GS125, 250TM, 360T		B39-6
250	MD250		YB5L-B
	TM250, M250		B39-6
	CUP		YB5L-B
360	T360		B39-6
400	T400		B39-6
440	T440		B39-6
504	GS504		B39-6
	MALAGUTTI		
50	Centro, -SL	94-	YB4L-B
	Centro, SL/SL Kat		YB5L-B
	Ciak	99	YB5L-B
	Colors		YB4L-B
	Crosser EL	98	YB4L-B
	CR1	96-	YB4L-B
	Dune ES	89	YB4L-B
	Evolution		YB4L-B
	F10, F12/F12LC		YB4L-B
	F12LC Twin Disk		YB4L-B
	F15/F15 Twin Disk		YB4L-B
	F15 Twin Disk/Digit		YB5L-B
	Phantom F.12	94-	YB4L-B
	Fifty Top	91	YB4L-B
	Fire Fox F15		
	F.10		YB4L-B
	Mistral		YB4L-B
	New Dribbling		YB4L-B
	RST		YB4L-B
	Top		YB4L-B
	Yesterday, EURO	99	YB4L-B
100	Ciak	99	YB5L-B
	Phantom F.12	99	YT5L-BS
	F12		YTX5L-BS
	Ciak		YB9-B
125	F18		YB9-B
	Madison	00	YB9-B
	Runner VS, Rally	87-	YB3L-A
	Runner, R	-86	6N6-3B
150	Ciak		YB9-B
	F18		YB9-B
	Madison		YB9-B
180	Madison		YB9-B
250	Madison	00	YB9-B
	Phantom Max	04	YTX12-BS
400	Madison K	02/04	YB12AL-A*
500	Spider Max	04/05	YB14L-A2*

C.C.	MODEL	YEAR	YUASA BATTERY
	MALANCA		
125	1252CE		6N11A-1B
	125OB One		12N5.5-4B
	Mark125		12N5.5-4B
150	150GT		6N11A-1B
	MATCHLESS		
250	250		B38-6A
350	350		B38-6A
500	500		B38-6A
650	(6V)		B38-6A
	(12V)		YB7L-B
750	750		YB7L-B
	MBK		
50	Active		YB4L-B
	Booster	93-96	YB4L-B
	Booster Road	95	YB4L-B
	Booster NG	96-97	YB4L-B
	Booster Rocket	96-97	YB4L-B
	Booster Spirit	-99	YB4L-B
	Booster Track	-99	YB4L-B
	CTS/SS		YB4L-B
	Equalis	-99	YB4L-B
	Evolis	93-97	YB4L-B
	Fizz	95-96	YB4L-B
	Forte	96-97	YB4L-B
	Flipper	00	
	Nitro	-99	YB4L-B
	Ovetto	-99	YB4L-B
	Sorriso		YB4L-B
	Target		YB4L-B
	X-Limit DT50	97	YB3L-A
80	Evolis		YB4L-B
100	Booster	95-96	YTX5L-BS
	Nitro		YTX4L-BS
	Ovetto		YTX4L-BS
125	Doodo		YB7L-B2
	Skyliner125	00-	12N7-3B
	Flame	95-97	YTX7A-BS
	Flame R	-98	YTX7A-BS
	Skyliner125		YB7L-B2
	XC Flame/Flame R		YTX7A-BS
150	Vertex		YTX7A-BS
	Skyliner		YB7L-B2
250	Skyliner250	00	YT7B-BS
300	Kilibre	04	YTX9-BS
660	XT660R	04	YT9B-4
	XT660R	04	YT9B-4
	MORINI		
125	Corsaro		6N11A-1B
	Country		6N11A-1B
150	150SS		6N11A-1B
175	Turiso, Spor		B49-6
350	Coguaro		YB18L-A
	Dart		YB14L-A2
	Excalibur		YB18L-A
	Kanguro		6N2-2A
	Kanguro		YB18L-A
	New York		YB18L-A
	Sport bicil.		12N9-3B
	Sport bicil. (El-Starter)		YB18L-A

C.C.	MODEL	YEAR	YUASA BATTERY
	MORINI		
500	Enduro		6N2-2A
	Turbo		YB18L-A
501	Camel		YB18L-A
	Coguaro		YB18L-A
	Excalibur		YB18L-A
	New York		YB18L-A
	MOTO GUZZI		
125	Bicilindrico		6N11A-3A
	Bizylinder		6N11A-3A
	Custom		12N9-4B-1
	Stornello Scrambler		B38-6A
	Stornello Sport		B39-6
	TT		12N5.5-4A
160	Stornello Scrambler		B38-6A
175	Lodola		B49-6
200	Galletto		12N24-3A
	Motocarro Ercolino		B38-6A
250	4 cilinder		YB12A-A
	Bicilindrico		6N11A-3A
	Bizylinder		6N11A-3A
350	Florida		YB18L-A
	GTS (4 cylinder)		52015
	Nevada/Nevda club		YB18L-A
	NTX		YB18L-A
	V35 Custom	82-86	YB18L-A
	V35 Ⅱ	81-86	Y60-N24AL-B
	V35/V35 GT/V35 C		Y60-N24AL-B
	V35 Imola/V35 Monza		Y60-N24AL-B
	V35		Y60-N24AL-B
400	GTS (4 cylinder)		52015
500	Falcone		B38-6A
	Falcone u.t.		YB18L-A
	V50 Custom	81-86	YB18L-A
	V50 Ⅲ	81-86	Y60-N24AL-B
	V50/V50C		Y60-N24AL-B
	V50 Imola/V50 Monza		Y60-N24AL-B
650	Nevada	91-93	Y50-N18L-A
	Nevada N.T	94-98	Y60-N24AL-B
	NTX		YB18L-A
	V65 Custom	82-86	YB18L-A
	V65 GT	87-94	Y60-N24AL-B
	V65 Lario	84-87	Y60-N24AL-B
	V65 Sport	82-87	Y60-N24AL-B
	V65 Florida	86-93	Y60-N24AL-B
750	Breva	05	YB14L-A2
	Nevada	05	YB14L-A2
	Nevada, Club	00-02	YB18L-A
	NTX	88-92	YB18L-A
	Strada	93-96	Y60-N24AL-B
	Targa	90-93	Y60-N24AL-B
	V7		Y60-N24AL-B
	V75	95-97	YB18L-A
	Breva		B38-6A
850		81-85	Y60-N24AL-B
	T3, T4, T5 Ⅲ	83-88	Y60-N24AL-B
1000	Califirnia Ⅱ/Ⅲ	82-98	Y60-N24AL-B
	Convert		Y60-N24AL-B
	Daytona, RS	92-98	Y60-N24AL-B
	G5/Convert		Y60-N24AL-B
	GT		Y60-N24AL-B
	Le Mans Ⅲ	85-93	Y60-N24AL-B
	Mille GT	87-93	Y60-N24AL-B
	Quota	92-95	Y50-N18L-A

C.C.	MODEL	YEAR	YUASA BATTERY
	MOTO GUZZI		
1000	SP/Ⅱ/Ⅲ	77-91	Y60-N24AL-B
	SP/California/Ⅲ		Y60-N24AL-B
	Strada	93-96	Y60-N24AL-B
	V10 Centauro Sport/GT/SP	97-00	Y60-N24AL-B
	1000NT		Y60-N24AL-B
	1000S	94-98	Y60-N24AL-B
1100	Breva		YTX20L-BS
	California		YTX20-BS
	Breva Griso		YTX20CH-BS
	California EV, Stone	99-04	53030
	JACKAL		53030
	Quota1100ES	00-01	Y60-N24AL-B
	V11 Sport	99-	Y60-N24AL-B
	V11 Le Mans		53030
	V11 Le Mans Rosso Corsa		YTX15L-BS
	V11 Ballabio		YTX15L-BS
	V11 Cafe Sports		YTX15L-BS
	1100 Sport/1	94-01	Y60-N24AL-B
1256	MGS-01“ CORSA ”		YTX20L-BS
	MOTRON		
50	Compact Racing RZ1		YB4L-B
	Invader		YB4L-B
	Spike		YB4L-B
	Sting		YB4L-B
	Syncro		YB4L-B
	Thunder		YB4L-B
	XLE		YB4L-B
	MOTOTRANS		
	250Strada		12N12A-4A-1
	350Forsa		Y50-N18L-A
	350Vento		12N12A-4A-1
	500Desmo		YB14L-A2
	500Twin		Y50-N18L-A
	MV AGUSTA		
125	125GT, GTL		6N11A-1B
	GT125SP		12N5.5-3B
250	TE-SM	05	YTZ7S
350	Scrambler Elettronica		12N5.5-3B
450	TE-SM	05	YTZ7S
510	TE-SM	05	YTZ7S
750	Aviamento, GT		Y60-N24AL-B
	F4, Brutale	04-	YTZ10S
	F4, SERIE Oro		Y60-N24AL-B
800	S, SS		Y60-N24L-A
900	GT		Y60-N24L-A
1000	F4 1000		Y60-N24L-A
1100	Grand Prix		Y60-N24L-A
	MZ		
125	125ES, ETS		6N11A-1B
	125ETZ		12N9-3B
	Roadstar	93-94	YB5L-B
	Sazson Sport Star	93-97	YB5L-B
	125TS		6N11A-1B
	Moskito, SX		
	Baghira		
	Mastiff		
	150ETZ		12N9-3B

C.C.	MODEL	YEAR	YUASA BATTERY
	MZ		
150	TS150		6N11A-1B
250	ETS250		6N11A-1B
	ETZ250		12N9-3B
	TS250		6N11A-1B
251	Saxson Fun, Tour	93-94	YB5L-B
301	Saxson Fun	93-94	YB5L-B
	Saxson Tour	93-94	YB5L-B
500	Green Star	97	YB14L-A2
	Red Star	97	YB14L-A2
	Saxson Country	93-97	YB14L-A2
	Saxon Fun	93	YB14L-A2
	Silver Star Classic	93-96	YB14L-A2
	Tour	93-94	YB14L-A2
660	Skorpion Tour	94-97	YB9L-B
	Skorpion Race Replica	95-96	YB9L-B
	Skorpion Replica	97	YB9L-B
	Skorpion Sport	94-97	YB9L-B
	Skorpion Classic	97	YB9L-B
	Skorpion Traveller	97	YB9L-B
	PEUGEOT		
25	FOX LA	95-97	YB4L-B
50	Buxy	95-97	YB4L-B
	Buxy RS	96-97	YB4L-B
	Elyseo	98	YB4L-B
	Elystar TDS	03-	YB7L-B2
	FOX Lux	95-97	YB4L-B
	Looxor	01-	YB4L-B
	Looxor TDS	02-	YB7L-B2
	Rapido/Rapido3	01-	YB4L-B
	SCLI Metropolis	01-	YB4L-B
	Speedake	01-	YB4L-B
	Speedfight/LC	97-99	YB4L-B
	Speedfight2	00-	YB4L-B
	Squab	96-97	YB4L-B
	ST	01-	YB4L-B
	SV/SV Geo	93-97	YB4L-B
	SV Junior	93-96	YB4L-B
	SV Blue Star	97	YB4L-B
	Trekker Road/Off Road	99	YB4L-B
	Vivacity	99	YB4L-B
	X-Fight		YB4L-B
	Zenith	95-96	YB4L-B
	Liverty		YB4L-B
80	SV80	93-96	YB5L-B
100	Elyseo	99	YB7L-B2
	Elyseo	01-	YTX5L-BS
	Looxor	01-	YTX5L-BS
	Speedfight	01-	YTX5L-BS
	Speedfighter	98	YTX5L-BS
	Speedfight2	00-	
	SV	-97	YB5L-B
	Trekker	98	YTX5L-BS
	Trekker	01-	YTX5L-BS
	Vivacity	99	YTX5L-BS
	Vivacity	01-	YTX5L-BS
	X-Fight	01-	YTX5L-BS
	Zenith	01-	YB4L-B
105	Ciclomotore (E-Starter)	01-	YB4L-B
125	Elyseo		YB7-A
	Elystar	02-	YB7-A
	SV125	93-97	YB5L-B
150	Elyseo	98	YB7-A
	Elystar	02-	YB7-A

C.C.	MODEL	YEAR	YUASA BATTERY
	PEUGEOT		
250	ST/SV	01-	YTX12-BS
	PIAGGIO		
25	Free, FL	94-98	YB4L-B
	Velofax	-98	YB4L-B
	Zip	94-98	YB4L-B
50	DNA		YTX4L-BS
	Diesis		YB4L-B
	Fly		YB4L-B
	Free, FL, FL Ⅱ	94-99	YB4L-B
	Free Delivery		YTX4L-BS
	Liberty	-99	YB4L-B
	Liberty4T		YB9-B
	NRG	94-98	YB4L-B
	NRG MC2	96-98	YB4L-B
	NRG Extreme	99-00	YTX4L-BS
	NRG MC3	01-	YTX4L-BS
	NRG PureJet	03-	YB4L-B
	NTT		YB4L-B
	Quartz	93-98	YB4L-B
	Scatto		YB4L-B
	Sfera/FL	93-98	YB4L-B
	Stalker		YB4L-B
	Storm	95-96	YB7-A
	Tiphoon	94-99	YB4L-B
	Velofax	-98	YB4L-B
	Vespa Elestar		6N11A-3A
	Vespa ET2, Injection	98-	YB4L-B
	Vespa PK FL/FL2		YB7-A
	Vespa PK/HP		YB7-A
	Vespa PK N, S		YB7-A
	Vespa PK Rush		YB7-A
	Zip/Zip Fast Rider		YB4L-B
	Zip4T	02-	YTX9-BS
	Zip cat. 2T	02-	YTX4L-BS
	Zip FR/ RST/ SP		YB4L-B
80	P80X,		12N5.5-3B
	PK80		12N5.5-3B
	PK80 S, XL		YB7-A
	PX80 E		YB7-A
	PX80 E		YB9-B
	PX80 E Lusso	90-96	YB7-A
	Sfera	93-95	YB7-A
125	Beverly	00-	YT12B-BS
	Beverly125 GT		YB9-B
	Cosa, CL, FL, X	-95	YB7-A
	ST4 Leader	00-	YTX9-BS
	Excutive	00-	YB9-B
	Fly		YB9-B
	Hexagon, Hexagon LX, RST	-99	YB9-B
	Hexagon LX4	00-	YTX12-BS
	Liberty	99	YB9-B
	Runner		YB9-B
	Sfera/FL	96-98	YB7-A
	Skipper		YB7-A
	Skipper LX/ST4T	99	YB9-B
	SKR	94-98	YB7-A
	Superhexagon GTX	00-	YTX12-BS
	Tiphoon	96-99	YB7-A
	Vespa ET4	96-00	YB9-B
	Vespa ETS		YB7-A
	Vespa P125X	-98	12N5.5-3B
	Vespa PK-S, -FL, - XL		YB7-A
	Vespa PX E	-98	YB9-B

C.C.	MODEL	YEAR	YUASA BATTERY
	PIAGGIO		
125	Vespa PX S	-98	YB7-A
	Vespa Sprint		B39-6
	Vespa Granturismo125L		YTX12-BS
	Vespa T5		YB7-A
	X8		YB10L-B.P
	X9	00-	YB9-B
	Zip 4T	00-	YTX9-BS
150	Cosa CL, X		YB7-A
	Excutive		YB9-B
	Hexagon	95-97	YB9-B
	Liverty LE150	00	YB9-B
	Skipper		YB7-A
	Skipper LX/ST 4T	-99	YB9-B
	Vespa ET4	99-	YTX9-BS
	Vespa GL		B39-6
	Vespa GS		B49-6
	Vespa PX E		YB9-B
	Vespa PX X		YB7-A
	Vespa Sprint		B49-6
180	Hexagon LXT	-99	YB10L-A2
	Hexagon LXT	00-	YTX12-BS
	Superhexagon GTX	01-	YTX12-BS
	Vespa SS	01-	B49-6
	X9	01-	YB10L-B
200	Beverly		YT12B-BS
	Cosa	-96	YB9-B
	Liverty		YB10L-B.P
	Vespa P E		YB7-A
	Vespa PX E Lusso	-98	YB9-B/YB7-A
	Vespa Granturismo200L		YTX12-BS
	Vespa GT200		YB10L-B.P
	X8		YB10L-B.P
250	Beverly250 GT		YB10L-B.P
	Hexagon	98	YB9-B
	Hexagon	99	YB10L-B
	Hexagon GT	00-	YTX12-BS
	Superhexagon GTX	-00	YB10L-B
		03-	YB10L-B.P.
	Superhexagon GTX	01-	YTX12-BS
	Vespa GTS250		YB10L-B.P
	X9	01-	YTX12-BS
500	Beverly		YB10L-B
	Beverly	03-	B10L-B.P.
	Nexus		YB14L-A2
	X9	01-	YB14L-A2
	RIZZATO		
50	Byte AT10		YB4L-B
	Hacker AT12, LC/Racing		YB4L-B
	Carosello		YB4L-B
	TGB/WINKING		
50	AS25 Bunny	96	YB4L-B
	50 Akros	97	YT4L-BS
	AS50 X Bunny	94-95	YB4L-B
	AS50 X Kurier	95	YB4L-B
	AT50 Bunny	93	YB4L-B
	AT50 Bunny Gespann	93-94	YB4L-B
	50 Ergon	97	YT4L-BS
	TRIUMPH		
120	Bonneville		12N7-3B

C.C.	MODEL	YEAR	YUASA BATTERY
	TRIUMPH		
150	Trident		12N7-3B
	T150		12N7-4A
173	Tigress		6N11A-1B
200	Tiger		6N11A-1B
250	Tigress (6V)		6N11A-1B
	Tigress (12V)		6N11A-1B x 2pcs.
	T250		12N7-4A
350	350 (6V)		6N11A-1B
	350 (12V)		B39-6 x 2pcs.
	350 3TA, Twenty One		B38-6A
500	500 (12V)		B39-6 x 2pcs.
	5TA, TR5A/R		6N11A-1B
600	600 (12V)		B39-6 x 2pcs.
	6T, T20B		6N11A-1B
	TT600	00-02	YTX12-BS
650	T120 Bonneville		YB7L-B
	600		B39-6 (x 2pcs)
	6T, T20B		6N11A-1B
750	Bonneville, Tiger		12N9-4B-1
	Daytona/Trident	93-00	YB14L-A2
	Speed Triple	97	YB14L-A2
	T750		12N7-4A
800	Bonneville	01-02	YTX12-BS
885	T509 Speed Triple		YB14L-A2
	Legend TT	99-02	YB14L-A2
	Thunderbird Sport		YTX14-BS
	Tiger	99-01	YTX14-BS
	Tiger	-98	YB14L-A2
	Trophy		YB14L-A2
900	Adventurer	96-02	YB14L-A2
	Daytona	93-99	YB14L-A2
	Legend TT	98-	YB14L-A2
	Speed Triple	94-00	YB14L-A2
	Sport Sprint	98	YB14L-A2
	Sprint	92-99	YB14L-A2
	Super Ⅲ	94-99	YB14L-A2
	Thunderbird	95-02	YB14L-A2
	Tiger	93-98	YB14L-A2
	Tiger	99-	YTX14-BS
	Trident	91-00	YB14L-A2
	Trident Sprint	93-96	YB14L-A2
	Trophy	91-98	YB14L-A2
	Trophy	92-99	YTX14-BS
	T90		6N11A-1B
	T509 Speed Triple	97-01	YB14L-A2
955	Daytona 955i	99-	YTX14-BS
	Speed Triple	99-	YTX14-BS
	Sprint ST, RS	00-02	YTX14-BS
	Tiger	02-	YTX14-BS
	T595 Daytona	97-98	YB14L-A2
956	Masterblaster	96-97	YB14L-A2
1000	Daytona	91-92	YB14L-A2
1200	Daytona	93-99	YB14L-A2
	Trophy	91-98	YB14L-A2
	Trophy	00-02	YTX14-BS
	VELOCETTE		
	350, 500, Early Venson		B38-6A
	Early Thruxton, Viper		B38-6A
	LE, Voque (12V)		B38-6A x 2pcs.
	ZUNDAPP		
125	GS125		6N11A-3A

C.C.	MODEL	YEAR	YUASA BATTERY
	ZUNDAPP		
125	KS125		6N11A-3A
175	KS175		6N11A-3A
850	K850 Super		YB9L-B
	VALPADANA		
	Motori agricoli	89	Y60-N24-A*
	BUELL		
500	Blast	00-05	YTX14-BS
984	XB9R Firebolt	02-05	YTX14-BS
	XB9S Lightning	02-05	YTX14-BS
1000	RR1000	87	YB16-B-CX
1200	M2 Cyclone	97-02	YTX20L-BS
	RR1200	88-90	YB16-B-CX
	RS1200	89-93	YB16-B-CX
	RSS1200	91-93	YB16-B-CX
	S1 Lightning, WL White	96-99	N/A
	S2, S2T Thunderbolt	94-96	YB16-B-CX
	S3, S3T Thunderbolt	97-02	YTX20L-BS
	X1 Lighting	99-02	YTX20L-BS
	XB12R Firebolt	04-05	YTX14-BS
	XB12S Lightning	04-05	YTX14-BS
	HARLEY-DAVIDSON		
90	X90/Z90	73-76	YB7L-B
125	SS125, SX125	74-78	YB7L-B
	SXT125	75-78	YB7L-B
	TX125	73-78	YB7L-B
175	SS175, SX175	74-78	YB7L-B
250	SS250, SX250	75-78	YB7L-B
500	MT500	All Years	YB14L-A2
883	XL, XLH	97-03	YTX20L-BS
		04-05	YTX14L-BS
	XLH Sportster883	86-96	YB16B-CX
1000	XL Series	79-85	YB16B-CX
	XLCH Series	70-78	YB7-A
	XLCR Café Racer	77-88	YB16B-CX
	XLH Sportster	79-86	YB16B-CX
	XLH Sportster	67-78	YHD-12
	XLX-61	83-85	YB16B-CX
	XR1000	83-85	YB16B-CX
1100	XL Series	87-93	YB16B-CX
1130	VRSC V-Road	02-05	YTX14-BS
1200	FL/FLH Series	65-77	YHD-12
	FL/FLH Series	48-64	H-2
	FX Series Kick-Starter	71-78	YB7-A
	FX Seies El. -Starter	71-78	YB16B-CX
	XL/XLH Series	04-05	YTX14L-BS
	XL/XLH Series	97-03	YTX20L-BS
	XL Series	87-96	YB16B-CX
	XLH Sportster1200	94-95	YB16B-CX
1340	Dyna-Glide Series	91-95	YB16HL-A-CX
	FL/FLH Series	97-00	YB30L-B
	FL/FLH Series	78-84	YHD-12
	FLHR Road King	94-96	Y50-N18L-A
	FLST Series	97-00	YTX20L-BS
	FLST Series	91-96	YB16HL-A-CX
	FLST Series	86-90	YB16B-CX
	FLT/FLHT Series	80-96	Y50-N18L-A
	FXD Series	97-00	YTX20L-BS
	FXD Series	91-96	YB16HL-A-CX
	FXLR	94	YB16B-CX

C.C.	MODEL	YEAR	YUASA BATTERY
	HARLEY-DAVIDSON		
1340	FX/FXR Series	79-94	YB16B-CX
	FXR Series	99-00	YB16B-CX
	FXST Series	97-00	YTX20L-BS
	FXST Series	91-96	YB16HL-A-CX
	FXST Series	91-96	YB16HL-A-CX
	FXST Series	80-90	YB16-B
	FXST/SB Softail	95	YB16HL-A-CX
1450	FL, FLH	99	YB30L-B
	FL, FLH Series	00-05	YIX30L
	FXD Series	99-05	YTX20L-BS
	FXST, FLST	00-05	YTX20L-BS
	POLARIS		
1507	V92C Classic Cruiser	98-04	YTX20L-BS
	V92DC Deluxe Cruiser	01-03	YTX20L-BS
	V92SC Sport Cruiser	00-01	YTX20L-BS
	V92TC Touring Cruiser	02-05	YTX20L-BS
	Vegas	03-05	YTX20L-BS
	DAELIM		
125	Fellow	97	
	NS125	97-	YTX7A-BS
	VC125	96	YB9-B
	VS125	97	YB9-B
	VT125 Magna	97	
	E-TON		
50	Beamer50	00-03	YTX5L-BS
	HYOSUNG		
50	SB Super Cab, SD50 Sense	All	YTX4L-BS
	SF Prima		
100	EZ100	All	YTX4L-BS
	HYUNDAI		
50	Cab	All	YTX4L-BS
	KASEA		
50	Sense, Prima	All	YTX5L-BS
	KYMCO		
50	B&W50		
	Calypso50, Cobra, Cross	99	YTX5L-BS
	Racer, Looping, People	99	YTX5L-BS
	CX/CX Super	00-	YTX4L-BS
	CX50, -Curio, -Super	95-97	YTX4L-BS
	Dink50/LC	99	YTX5L-BS
	Dj50, Djw50, Djx50	98-	YTX4L-BS
	Dj50, Djw50, Djx50	97	YT4L-BS
	Djy50		YTX4L-BS
	Filly50	99	YTX5L-BS
	Fever ZX	00	YTX5L-BS
	Heroism	95-97	YTX4L-BS
	K12	96-97	YTX4L-BS
	KB	97	YTX4L-BS
	People	00-	YTX5L-BS
	Sniper/Sniper DD	00-	YTX4L-BS
	Scout	97	YT4L-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	KYMCO		
50	Spacer	99	YTX5L-BS
	Super9	99	YTX5L-BS
	Top Boy	97	YTX5L-BS
	ZX Fever	95-97	YT4L-BS
80	Filly80	99	YTX5L-BS
100	AS100	99	YTX5L-BS
	KB	97	YTX5L-BS
	Top Boy	97	YTX7A-BS
125	B&W125	99	YTX9-BS
	Calypso125	99	YTX9-BS
	Dink/LX	97	YTX9-BS
	Fox Hunt	96	YTX7A-BS
	Heroism	95-96	YTX9-BS
	Jockey125	99	YTX7A-BS
	Movie125	99	YTX9-BS
	People125	00	YTX7A-BS
	Spacer	99	YTX9-BS
	Vivio		YTX9-BS
	Zing	99	YTX7A-BS
150	B&W150		YTX9-BS
	Dink/LX	97	YTX9-BS
	Fox Hunt	96	YTX7A-BS
	Heroism	96	YTX9-BS
	People150		YTX7A-BS
	Spacer	99	YTX9-BS
	Vivio		YTX9-BS
	Zing	99	YTX7A-BS
250	Super-9	00	YTX12-BS
	B&W250		YTX12-BS
	Dink250		YTX12-BS
	PGO		
25	Comet	95-97	YT4L-BS
	Galaxy	97	YT4L-BS
	Mega	97	YT4L-BS
50	Big Max	95-96	YB4L-B
	Big Max Sport	96-97	YT4L-BS
	Comet	93-96	YT4L-BS
	Comet Junior	94-97	YT4L-BS
	Galaxy	93-97	YT4L-BS
	Mega	97	YT4L-BS
	Star-Star Ⅱ	93-96	YB4L-B
	Tornado	97	YT4L-BS
80	Star	93-96	YT4L-BS
90	Big Max	97	YT4L-BS
	Galaxy	94-97	YT4L-BS
	Tornado	97	YT4L-BS
125	Kung Fu	94-96	
	LEM		
50	Flash		YB4L-B*
	Flash		YB4L-B* c/acido
	Ghibli		YB4L-B*
	Ghibli		YB4L-B* c/acido
	SANYANG		
50	Cinderella	89	YTX7A-BS
	Fiddle	75/77	YTX4L-BS
	Jet	79/81	YTX4L-BS
	Jungle	89	YTX4L-BS
	Reddevil	75/77	YTX4L-BS
	Superfancy	79/81	YTX4L-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	SANYANG		
100	Cinderella	99/01	YTX7A-BS
	Jet	75/77	YTX5L-BS
125	Attila	99/00	YTX7A-BS
	Husky	89	YTX7L-BS
	Newduke	00/01	YTX7A-BS
	Shark		YTX9-BS
	Superduke	00/01	YTX7A-BS
150	Attila	00/01	YTX7A-BS
	Shark		YTX9-BS
	Super Duke	96/	YTX9-BS
	SIMSON		
50	Albatros	97	12N5.5-3B
	Albatros El-Starter	97	YB5L-B
	Classic	96-97	12N5.5-3B
	S51/1 B, C, E		12N5.5-3B
	S53	93-95	12N5.5-3B
	SD CT, CTE	95	12N5.5-3B
	Superbar	96-97	
	Star	96-97	
	SR50 1B, 1C	93-95	12N5.5-3B
	SR50 2CE El.Starter	93	YB5L-B
	SR50 CC	94	12N5.5-3B
	SR50 CCE El.-Starter	94	YB5L-B
	SR50 M, XC, XG	94-95	12N5.5-3B
	SR50 XCE, XGE El.-Start	95	YB5L-B
80	Classic	96-97	12N5.5-3B
	Habicht	96-97	
	Sperber	96-97	
	S83	93-95	12N5.5-3B
	SR80 1B, 1C, CC	93-95	12N5.5-3B
	SR80 2CE El.-Starter	93	YB5L-B
	SR80 CCE El.-Starter	94	YB5L-B
	SR80 XC, XG	94-95	Y12N5.5-3B
	SR80 XCE, XGE	95	YB5L-B
	UTILITY VEHICLE		
	KAWASAKI		
300	KAF300, Mule500, 520, 550		YB14A-A2
400	KAF400, Mule600, 610		YB14A-A2
450	KAF450-B, Mule1000		YB16CL-B
540	KAF540, Mule2010, 2020, 2030		YB16CL-B
620	KAF620, Mule2500, 2510, 2520		YB16CL-B
	KAF620, Mule2500, 2510, 2520	03-	YTX20L-BS
	Mule3000, 3010, 3020		YB16CL-B
	Advantage Classic	03-05	YTX20L-BS
950	KAF950, Mule2510, 3010		Not Available
	PIAGGIO		
Ape	Ape50 FL	93	YB9-B
	Ape50 FL2		YB9-B
	Ape Mix	01-	YB9-B
	POLARIS		
425	Ranger 2X4	02-03	YB30L-B
500	Ranger 6X6, 4X4	98-03	YB30L-B
	SUZUKI		
620	QUV620F	05	YTX20L-BS

ASIAN

C.C.	MODEL	YEAR	YUASA BATTERY
	ALL TERRAIN VEHICLE		
	AEON (BENZAI)		
100	Cobra/CX-Sport100	All	YTX4L-BS
90	Cobra/CX-Sport90	All	YTX4L-BS
50	Cobra/CX-Sport50	All	YTX4L-BS
	ARCTIC CAT		
90	All Models	02	YTX4L-BS
250	All Models	All	YB14L-A2
300	All Models	All	YB14L-A2
400	All Models	All	YB14L-A2
450	All Models	All	YB14L-A2
650	650 4X4 Automatic	04	YB14-A2
	BOMBARDIER		
50	DS50, Quest	02-03	YTX4L-BS
90	DS90, DS90F, Quest	02-03	YTX4L-BS
200	Rally	03	YB14A-A2
330	Quadlander	04	YTX15L-BS
400	Qualander400XT, MAX	04	YTX20L-BS
	Outlander	03	YTX15L-BS
500	Traxter (All models), Quest	02-03	Y50N18L-A
	Traxter (All models), Quest	99-03	YB16CL-B
650	DS650	00-03	YTX15L-BS
	Quest	02-03	YB16CL-B
	CANNONDALE		
440	BIAZEE440, Cannibal, Glamis, Moto440, Speed	02-03	YTX9-BS
	FX400	01	YTX9-BS
	DRR		
	All models		YTX4L-BS
	E-TON		
50	AXL, TXL, NXL, RXL	99-03	YTX4L-BS
	All models	04-05	YTX5L-BS
90	AXL, TXL, NXL, RXL	00-03	YTX5L-BS
	All models	04-05	YTX5L-BS
	DXL90 Sierra	99-03	YTX4L-BS
150	CXL150 Yukon Ⅱ	00-01	YTX9-BS
	YXL150 Yukon	02-03	YTX9-BS
	HONDA		
125	ATC125M	86-87	YTX12-BS
	ATC125M	84-85	YB9A-A
	TRX125 Fourtrax	87-88	YTX9-BS
	TRX125 Fourtrax	85-86	YB9A-A
200	ATC200 Big Red	82-84	YB14A-A2
	ATC200M	84-85	YB14A-A2
	TRX200 Fourtrax	90-96	YTX12-BS
	TRX200 Fourtrax	84	YB14A-A2
	TRX200SX Fourtrax	86-88	YTX12-BS
250	ATC250ES Big Red	85-87	YTX12-BS
	ATC250SX	85-87	YTX12-BS
	TRX250 Fourtrax	85-87	YTX12-BS
	TRX250 FourTrax Recon, ES	97-05	YTX12-BS
	TRX250 Recon, ES	97-03	YTX12-BS
	TRX250 EX, Sportrax	01-03	YTX9-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	HONDA		
300	TRX300 Fourtrax	92-00	YTX14-BS
	TRX300EX, Sportrax	93-03	YTX9-BS
	TRX300FW Fourtrax 4x4	88-00	YTX14-BS
350	FL350R Odyssey	85	YTX12-BS
	TRX350, D Fourtrax 4x4	86-89	YTX14-BS
	TRX350 Rancher	00-05	YTX14-BS
400	FL400R Pilot	89-90	YTX14-BS
	TRX400EX, FourTrax, Sportrax	99-05	YTX9-BS
	TRX400 Rancher AT	04-05	YTX14-BS
	TRX400FW Foreman	95-03	YTX14-BS
450	TRX450 Fourtrax Foreman S, ES	98-04	YTX14-BS
500	TRX500 Fourtrax Rubicon	01-05	YTX14-BS
650	TRX650 FourTrax Rincon (Std.)	03-05	YTX14-BS
	(Optinal *cold starting)	03-04	YTX20L-BS
	KASEA		
50	Mini Skyhawk	All	YTX5L-BS
	Skyhawk50	All	YTX4L-BS
65	KS, KU models	All	YTX7A-BS
90	Skyhawk90	All	YTX7A-BS
	KS, KU models	All	YTX5L-BS
125	KS, KU models, Adventure	All	YTX7A-BS
150	Skyhawk150, Adventure	All	YTX7A-BS
170	Skyhawk170	All	YTX7A-BS
250	Skyhawk250	All	YTX7A-BS
	KAWASAKI		
80	KSF80-A (KFX80)	03-05	YTX5L-BS
110	KLF110-B Mojave	87-88	YB9L-A2
185	KLF185-A Bayou	85-88	YB10L-B
200	KLT200-A, C	81-84	YB10L-B
	KLT200-B, C	83	YB12A-A
220	KLF220-A Bayou	88-02	YB10A-A2
	KLF220-A Bayou (CN)	92-02	YB14A-A2
250	KLT250-A	82-83	YB12A-A
	KLF250-A Bayou	03-05	YB10A-A2
	KLF250-A Bayou (CN)	03-05	YB14A-A2
	KLT250-C Prairie	84-85	YB10L-B
	KLT250-C Prairie	83	YB12A-A
300	KEF300-A Lakota	95-00	YB14A-A2
	KEF300-A Lakota Sport	01-03	YB14A-A2
	KLF300-A Bayou	86-87	YB16CL-B
	KLF300-B Bayou	88-04	YB14A-A2
	KLF300-B Bayou (CN)	92-99	YB16CL-B
	KLF300-C Bayou300 4x4	89-04	YB14A-A2
	KLF300-C Bayou300 4x4(CN)	92-05	YB16CL-B
	KVF300-A Prairie300 4x4	99-02	YB14A-A2
	KVF300-A Prairie300 4x4(CN)	99-01	YB16CL-B
	KVF300-B Prairie300 4x4	99-02	YB14A-A2
	KVF300-B Prairie300 4x4(CN)	99-02	YB16CL-B
360	KVF360-A, B, C, Prairie360 4X4	03-05	YB14A-A2
400	KLF400-B Bayou4x4	93-00	YB16CL-B
	KSF400-A (KFX400)	03-05	YTX9-BS
	KVF400-A, Prairie400 4x4	97-00	YB14A-A2
	KVF400-A, Prairie400 4x4 (CN)	97-00	YB16CL-B
	KVF400-B, Prairie400 4x4	98-00	YB14A-A2
	KVF400-B, Prairie400 4x4 (CN)	98-00	YB16CL-B
	KVF400-C, Prairie400 4x4	99-02	YB14A-A2
	KVF400-C, Prairie400 4x4 (CN)	99-02	YTX14-BS
	KVF400-D, Prairie400 4x4	99-02	YB14A-A2
	KVF400-C, Prairie400 4x4 (CN)	99-01	YTX14-BS
650	KVF650-A, B, D, E Prairie650, 4x4	02-05	KMX14-BS
	4x4 Advantage Classic	02-03	KMX14-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	KAWASAKI		
700	KFX700 V-Force	03-04	KMX14-BS
	KSV700-A, B Prairie700 4X4	04-05	KMX14-BS
	KSV700-A, B D Prairie700, 4x4	04-05	KMX14-BS
	KVF650-A, B Prairie700, 4X4	04	KMX14-BS
750	KVF750-A, B, Brute Force750 4x4	05	KMX14-BS
	POLARIS		
50	Scrambler	01-02	YTX4L-BS
	Scrambler	03	YTX5L-BS
	Predator	04-05	YTX5L-BS
90	Predator, Sportsman	03-05	YTX5L-BS
	Scrambler, Sportsman	01-02	YTX4L-BS
200	Phoenix	05	YTX12-BS
250	All models	85-05	YB14A-A2
325	All models	87-02	YB14A-A2
330	Magnum, Trail Boss	03-05	YTX14AH-BS
335	Sportsman	98-01	YB14A-A2
400	All models	94-05	YB14A-A2
425	All models	95-02	YB14A-A2
450	Diesel .445 Liter (primary)	99-03	YB30L-B
	(secondary)		YB14A-A2
500	All Models (Exdl. Predator)	99-05	YB14A-A2
	Predator	03-05	YTX9-BS
600	Sportman	04-05	YB30L-B
700	Sportsman, Military	02-05	YB30L-B
800	Sportsman	05	YB30L-B
	SUZUKI		
80	LT80 Quad Sport	87-04	YTX5L-BS
160	LT-F160 QuadRunner	91-00	YB9A-A
	LT160, E QuadRunner	03-04	YB9A-A
	LT160E QuadRunner	89-94	YB9A-A
230	LT-F230 QuadRunner	86-87	YB10A-A2
	LT230E QuadRunner	87	Not Available
	LT230E QuadRunner	88-93	YTX12-BS
	LT230GE QuadRunner	85-86	YB10A-A2
250	LT-4WD QuadRunner	87-99	YB14A-A2
	LT-4WD QuadRunner (Opt)	87-99	Y50-N18A-A
	LT-F250 QuadRunner	88-01	YB14A-A2
	LT-F250 QuadRunner (Opt)	88-01	Y50-N18A-A
	LT-F250, F Ozark	02-05	YTX12-BS
	LT-F250F QuadRunner	99-02	YB14A-A2
	LT-F250F QuadRunner (CN, Opt)	99-02	Y50-N18A-A
	LT250EF QuadRunner	85-86	Y50-N18A-A
	LTZ250 QuadRunner	04-05	YTX12-BS
280	LT-F4WDX King Quad	91-99	YB14A-A
	LT-F4WDX King Quad (Opt)	91-99	Y50-N18A-A
300	LT300E QuadRunner 300E	87-89	YB14A-A2
	ELT-F4WDX KingQuad	99-02	YB14A-A2
	LT-F4WDX KingQuad(Opt)	99-02	Y50-N18A-A
400	LT-A400 Eiger 2WD, F Eiger 4WD	02-05	YTX14-BS
	LT-F400 Eiger 2WD, F Eiger 4WD	02-05	YTX14-BS
	LT-Z400 QuadSport	03-05	YTX9-BS
500	LT-A500F Vinson 4WD	04-05	YTX20CH-BS
	LT-A500F Vinson 4WD	02-03	YTX16-BS
	LT-A500F QuadMaster	00-01	YTX16-BS-1
	LT-F500F QuadRunner	98-03	YTX16-BS-1
	LT-F500F Vinson Manual 4WD	04-05	YTX20CH-BS
700	LT-A700X King Quad	05	YTX20CH-BS
	LT-V700F Twin Peaks	04	KMX14-BS
	LT700 Twin Peaks	04	YTX20CH-BS

C.C.	MODEL	YEAR	YUASA BATTERY
	YAMAHA		
80	YMF80 Badger	85-01	12N7D-3B
	YFM80R Raptor	02-03	12N7D-3B
100	YFM100 Champ	87-91	12N7D-3B
125	YFA-1 Breeze	89-03	YB12C-A
200	YFM200 Moto-4	85	YB14A-A1
	YFM200DX Moto-4	85-89	YB14A-A1
	YTM200, E, ER Tri moto	83-85	YB14A-A1
225	YFM225 Moto-4	86-88	YB14A-A1
	YTM225DR Tri Moto	85-86	YB14A-A1
	YTM225DX Tri Moto	83-85	YB14A-A1
230	YFU-1/T Pro-Hauler	89	YB14A-A1
250	YFB250 Timber Wolf 2WD	92-98	YB12C-A
	YFB250FW Timber Wolf 4WD	94-00	YB12C-A
	YFM250 Bear Tracker	99-04	YB14A-A2
	YFM250 Moto-4	89-91	YB14A-A1
350	YFM350ER Moto-4	87-95	YB14A-A1
	YFM350FW Big Bear 4WD	87-99	YB14A-A1
	YFM350U Big Bear 2WD	96-99	YB14A-A1
	YFM350X Warrior	87-03	YB12C-A
	YFP350 Terra Pro	88	YB14A-A1
	Raptor	04-05	YTZ10S
400	YFM400FW Kodiak/Automatic	03	YTX14AH-BS
	YFM400FW Kodiak/Automatic	96-02	YTX20L-BS
	YFM400FW Kodiak	93-95	YB14A-A1
	YFM400N Big Bear 2WD	00-03	YTX20L-BS
	YFM400FWN Big Bear 4WD	00-03	YTX20L-BS
	YFZ450	04	YT7B-BS
450	YFM450FW Kodiak/Automatic	03	YTX20L-BS
600	YFV600FW Grizzly	98-01	YTX20L-BS
650	YFM660FW Grizzly	02-03	YTX20L-BS
	YFM660R Rapter	01-03	YTX14-BS
	PERSONAL WATERCRAFT		
	ARCTIC CAT		
	Tiger Shark (All Models)	93-01	YB16CL-B
	AQA-JET CO.		
430	Aqua-Jet SX1	91	YB16-B
432	Aqua-Jet Sx1	89-90	YB16-B
	ARCTOCO		
650	Tiger Shark (All Models)	93-98	YB16CL-B
	BOMBARDIER		
1500	All Models	88-93	YB16L-B
	All Other Models	93-04	YB16CL-B
	GTX4-Tec	03-04	YB30CL-B
	FAZER		
430	All Models	88-89	YB16-B
	HONDA		
1235	Aqua Trax F-12X, F-12	02-03	YTX20L-BS
	Aqua Trax R-12X, R-12	03-04	YTX20L-BS
	KAWASAKI (JET SKI)		
300	JS300 TS,SX	86-91	YB16CL-B

C.C.	MODEL	YEAR	YUASA BATTERY
	KAWASAKI (JET SKI)		
400	JS400	76	YB16L-B
440	JS440	87-92	YB16CL-B
	JS440	77-86	YB16L-B
550	JS550	82-85	YB16L-B
	JS550, SX	86-95	YB16CL-B
650	JF650X2	86-95	YB16CL-B
	JF650 TS	89-96	YB16CL-B
	JL650 SC	91-95	YB16CL-B
	JS650 SX	87-95	YB16CL-B
750	JH750 SS	92-97	YB16CL-B
	JH750 ST	96	YTX20L-BS
	JH750 ST	95	YB16CL-B
	JH750 Xi	93-99	YB16CL-B
	JH750 XiR	94	YB16CL-B
	JH750 Zxi	95-97	YTX20L-BS
	JH750 SX,ZX	92-95	YB16CL-B
	JS750 Sxi, Sxi Pro	95-02	YTX20L-BS
	JT750 XiR, ST, STS	94-95	YB16CL-B
	JT750 STS, STX	96-98	YTX20L-BS
800	JS800 SX-R	03-04	YTX20L-BS
900	JH900 ZXi	95-97	YTX20L-BS
	JT900 STS, STX	97-04	YTX20L-BS
1100	JH1100-B Ultra130	01-04	YTX20L-BS
	JT1100 ZXi	96-03	YTX20L-BS
	JT1100 STX	97-03	YTX20L-BS
1200	JH1200-A, B Ultra150	99-04	YTX20L-BS
	JT1200-A STX-R	02-04	YTX20L-BS
1500	JT1500-C STX-15F	04	YTX20L-BS
	POLARIS		
All	All Models	All	YB16CL-B
	S.O.S. MARINE MFG		
All	All Models	All	YB16B-CX
	ULTRANAUTICS		
800	Sea Flash	89-92	Y60N24AL-B
	Wet Bike	87-92	Y60N24AL-B
	Wet Bike	85-86	YHD-12
	Jet Star1250 (Boat)	88-90	Y60N24AL-B
	Jet Star1260 (Boat)	91	Y60N24AL-B
	WET JET		
All	All Models	All	YB16B-CX
	YAMAHA		
All	All Wave Runner models	87-03	YB16CL-B
	SNOWMOBILE		
	ARCTIC CAT		
	All EFI Models 500cc & Over (W/O El. Starter)	94-01	YB7-A
	All EFI Models 500cc & Over (W/O El. Starter)	91-93	YB14L-A2
	All EFI Models 500cc & Over all carburetor models	91-01	Y50N-18L-A-CX
	500cc & Over	91-01	YB18-A
	All Models Less than 500cc	-93	YB14L-A2
	All Models Less than 500cc	94-01	YB14-A2
	BOMBARDIER/SKI-DOO		
	All Models	-98	Y50N-18L-A-CX
	All 4-stroke	03	YTX24HL-BS
	CK3 Types	99-03	Y50N-18L-A-CX
	ZX Types	99-01	YTX15L-BS
	ZX Types	02-03	YTX20L-BS
	KAWASAKI		
All	All Models	All	Y50N-18L-A-CX
	POLARIS		
	Indy, Indy Trail	84-91	Y50N-18L-A-CX
	All EFI	93-97	YB9A-A
	Sprint (El. Start)	86-90	Y60-N24-A
	Wide Track	89-05	Y50N-18L-A-CX
	All Other models	92-05	YB14A-A2
	All Electric start kits	85-93	Y50N-18L-A-CX
	All Electric start kits	94-05	YB14A-A2
	YAMAHA		
80	SV80E Sno-Sport	88-90	YB7L-B
125	SV125E Sno-Sport	90-91	YB14L-A2
300	CF300 Inviter	86-90	YB16AL-A2
340	CS340 Ovation Delux/LE	89-98	YB14L-A2
	EC340 Excel Ⅲ	81-88	YB14L-A2
	ET340E Enticer	79	Y50-N18L-A-CX
	ET340E Enticer	80	YB14L-A2
480	PZ480E Phazer Delux	84-89	YB14L-A2
	PZ480E Phazer Ⅱ LE, SS	90-98	YB14L-A2
	VT480 Venture GT	92-93	YB14L-A2
	VT480 Venture XL	91-97	YB14L-A2
	VT480TR Venture TR Electric	98	YB14L-A2
500	PZ500DX Phazer500 Delux	01	YB16AL-A2
	VT500 Venture500	97-01	YB16AL-A2
	VT500 Venture500 XL	99-00	YB16AL-A2
	VX500E Vmax	94-01	YB16AL-A2
540	EC540 Excel	79-80	Y50-N18L-A-CX
	VK540E, Ⅱ, Ⅲ	89-03	YB16AL-A2
	XL540 XLV	85-90	YB16AL-A2
570	EX570E Exciter	88-90	YB16AL-A2
	EX570E Exciter Ⅱ LE	91-93	YB16AL-A2
600	VT600 Venture600	97-98	YB16AL-A2
	VT600 Venture600	99-03	Y50-N18L-A-CX
	VX600E/DX Vmax600 LE/DX	94-96	YB16AL-A2
	VX600ER Vmax600 ER	02-03	Y50-N18L-A-CX
	VX600XTC Vmax600 XTC	97-98	YB16AL-A2
	VX600DX Vmax600 Delux	99-01	Y50-N18L-A-CX
700	SXV700ER SX Viper ER	02-03	Y50-N18L-A-CX
	VT700 Venture700	98-03	Y50-N18L-A-CX
	VX700XTCD Vmax700 XTC Delux	98	Y50-N18L-A-CX
	XV700DX Vmax700 Delux	99-00	Y50-N18L-A-CX
	VX700ER Vmax700 ER	01-02	Y50-N18L-A-CX
1000	RX1000R RX (All models)	03	YTX20L-BS

DISCLAIMER

The replacement battery information published in this book has been obtained from the equipment manufacturers listed, except as otherwise noted. Users are cautioned that the information contained in this book was the most current information provided to us at the time of publication.

The information is subject to change upon notice from equipment manufacturers or field experience. Users should use the most current edition of the Yuasa Motorcycle Battery Replacement Data Book. Yuasa expressly denies any responsibility for the accuracy provided to us. While we have made every effort to accurately catalog the replacement battery information contained in this book, Yuasa denies any liability for damages as a consequence of using the information in this books. Users should also attempt to obtain replacement battery information from the equipment manufacturer 's user manual or service department for the specific application.

YUASA

Technical Manual

Charging a New
Routine Charging
Charging Instructions for Sealed VRLA Batteries
Routine Maintenance for Sealed VRLA Batte

YUASA® BATTERY CHARGERS

Yuasa SmartShot Automatic 12V 1.5 Amp 5 Stage Battery Charger

Part No. YUA1201501

Yuasa's Automatic 12V 1.5 Amp battery charger incorporates superior 5 stage charging technology. This high power unit provides error proof operation to fully charge sealed maintenance free and conventional lead acid batteries

- Provides up to 16 volts to enable recovery of sulfated batteries during pre-qualification stage
- 28 day Charge Recycle – re-evaluates battery status for long term storage
- Designed to prevent overcharging
- AC power LED indicator
- Charging and float mode LED display
- Reverse polarity protection
- Spark-free operation
- Battery accessory leads and fused ring connectors included
- Steel construction for durability
- 3 year limited warranty

Yuasa SmartShot 900 Automatic 12V 900mA Battery Charger

Part No. YUA1200901

Yuasa's Automatic 900mA 12V battery charger is the industry's most powerful plug-in wall charger. Combining the latest technology and a host of user-friendly features, this compact, high-power unit provides optimum amperage return and is designed to fully charge and maintain conventional and sealed maintenance free batteries.

- Fully automatic three level charge cycle for effective charging
- Reaches 14.4 volts peak, then automatically switches to float
- Designed to prevent overcharging
- AC power LED indicator
- Charging and float mode LED display
- Reverse polarity protection
- Spark-free operation
- Durable construction for longer life
- Battery accessory leads and fused ring connectors included
- 12 ft. output cord
- 3 year limited warranty

TABLE OF CONTENTS

PREFACE:

A Practical Understanding of Lead Acid Batteries . . . 2

SECTION ONE: Battery Basics and Safety

About this book . . . 3
About YUASA . . . 3
Features and Benefits . . . 4
The Lead Acid Battery . . . 5-6
The Yuasa Battery Line . . . 7
Yuasa's Conventional Battery . . . 7
YuMicron Battery . . . 7
YuMicron CX Battery . . . 8
Sealed (MF) VRLA and High Performance Batteries . . . 8
Battery Safety . . . 9

SECTION TWO: Selecting and Installing a New Battery

Selecting the Proper Battery . . . 10
About Sensors . . . 11
Battery Activation for Conventional and YuMicron Types . . . 12
Activating Standard Batteries . . . 12

SECTION THREE: Inspecting, Testing and Charging

The Discharge – Charge Cycle . . . 13
Reasons for Self-discharge . . . 14-15
Ampere-Hour and Cold Cranking Amps . . . 16
Inspecting a Battery . . . 16-17
Battery Testing Devices . . . 17
Battery Testing . . . 18
Chargers and Charging . . . 19-20
Charging a New Standard Battery . . . 20-21
Quick Charges . . . 21

SECTION FOUR: Maintenance and Storage

Monthly Maintenance for Conventional and YuMicron Types . . . 22
Storage . . . 22
Sulfation and Freezing . . . 22-23

SECTION FIVE: Sealed VRLA Batteries

New Generation Battery Technology . . . 24
Sealed VRLA Battery Construction . . . 24
Features . . . 24-25
How a Sealed VRLA Battery Differs from Conventional Types . . . 25
Activation and Installation . . . 26
To Activate a Sealed VRLA Battery . . . 26-27
Measuring Voltage . . . 28
Discharge Characteristics . . . 29
Self-discharge . . . 30
Choosing a Charger . . . 30
Charging a Newly Activated Sealed VRLA Battery . . . 31
Routine Charging . . . 32
Charging Instructions for Sealed VRLA Batteries with Voltage of 11.5 or Less . . . 33
Routine Maintenance for Sealed VRLA Batteries . . . 33

GLOSSARY

. . . 34-40

PREFACE

A Practical Understanding of Lead Acid Batteries

Lead acid batteries are relatively simple in design. Dissimilar metal plates are immersed in an electrolyte solution consisting of sulfuric acid and water. These are then insulated from each other with a permeable, non-conductive material, which allows the transfer of ions. The transfer of ions occurs during the discharge and recharge of the battery. Also occurring is the change in specific gravity or density of the electrolyte. During the discharge period, sulfuric acid is drawn from the electrolyte into the pores of the plates. This reduces the specific gravity of the electrolyte and increases the concentration of water. During the recharge, this action is reversed and the sulfuric acid is driven from the plates, back into the electrolyte, increasing the specific gravity.

During the discharge, lead sulfate is being formed on the battery plates. Although this is the normal activity within the battery during discharge, a timely recharge is required to drive out the sulfuric acid into the electrolyte. Without this recharge, the lead sulfate will continue to develop and become difficult if not impossible to breakdown during recharge. Once this advanced sulfation develops, permanent capacity loss or total failure of the battery is likely. Besides the sulfation concerns, many other detrimental actions are taking place inside the battery while in a discharged condition.

The corrosive effect on the lead plates and connections within the battery is greatly increased due to the reduced specific gravity of the electrolyte. The corrosion of the plates will typically result in a gradual reduction in performance followed by battery failure. The corrosion associated with the inter cell connectors and the connecting welds will in many instances result in a sudden battery failure. The corroded connector may have sufficient integrity to support low drain accessories such as lights and instruments, but lack the necessary strength to provide the high discharge current required to start the vehicle. This corrosive effect can also dissolve the lead into solution, which in turn may compromise the plate insulators and result in micro shorts. Another condition that frequently occurs in a discharged battery is freezing. In a deeply discharged battery, the electrolyte has a reduced specific gravity and becomes a higher percentage of water than sulfuric acid. During this condition, the battery may freeze at temperatures as high as 32°F. The electrolyte in a fully charged battery will not freeze in temperatures down to -65°F.

Deep discharge can be created by a multitude of conditions, but the predominant reason is neglect. During long periods of storage, the battery state of charge must be checked and maintained per the battery manufacturers recommendations. Other conditions that can drain the battery are inoperative or inadequate charging systems on vehicles, parasitic or key off drains, loose or dirty terminal connections, etc. Although many of these conditions can be corrected, often the problems you cannot correct may be overcome by a periodic charging schedule. You can establish a routine by which you check and charge your battery or choose to permanently attach a Yuasa Automatic Charger while the vehicle is not in use.

When charging your battery, always refer to the instructions on both the battery and the charger. While maintaining your battery at a full state of charge will insure optimum life, overcharging may significantly reduce it. With a conventional type battery that offers access to the cell compartments, the periodic addition of distilled water may be required. Water loss is normal in these batteries through the process of electrolysis and evaporation. Low electrolyte levels that expose the lead plates to the air will result in permanent damage to the battery. Maintain the electrolyte levels above the minimum fill lines on the battery and at or below the maximum line. A sealed VRLA (Valve Regulated Lead Acid) battery should be maintained with the same care as a conventional type battery with the exception of the addition of distilled water. Sealed VRLA batteries have a predetermined quantity of electrolyte added at the factory or in the field using the acid bottle specified for the battery. Once activated, the battery is permanently sealed and must never be opened.

A little bit of care and understanding of how your battery operates and is maintained will insure maximum service life.

SECTION 1

Battery Basics and Safety

About this book

If you're looking for more than everyday information about batteries, read on.

Maybe you're a retailer, the expert whose battery knowledge and recommendations guide customers every day. Perhaps you are a service technician or dealer – the person vehicle owners turn to with questions. Or maybe you're an enthusiast set on "knowing everything" about your bike and how to keep it running.

Whatever your reason for wanting to boost your battery IQ, YUASA is pleased to provide this copy of the ultimate battery book.

It's filled with in-depth information: how batteries work, maintenance and installation tips and how to get maximum power and life from your battery. We'll talk about chargers and testers. Of course, we'll also fill you in on the complete line of YUASA batteries, chargers and accessories.

About YUASA

The first thing you need to know about batteries is YUASA. You might say that when it comes to powersports vehicle batteries, we wrote the book! We're the largest manufacturer and distributor of small engine starting batteries in North America.

If you purchased a motorcycle, snowmobile, personal watercraft, ATV, riding mower or garden tractor manufactured in the U.S., chances are the battery that starts it was made by Yuasa. In fact, our batteries are original equipment in just about every major make of powersports vehicles.

If you've bought a replacement battery for your powersports vehicle, most likely it was made by Yuasa. Altogether, we manufacture approximately three million batteries a year for small engine starting applications at our Reading, Pennsylvania plant.

Features and Benefits

Component	Features	Benefits
Cast Grid	Special Grid Design	Severe vibration resistance & improved conductivity
Active Material	Proprietary Formulation	Reduced shedding, maximum utilization, & long service life
Pasted Plates	Specified Thickness & Weight	Ensures vibration resistance through precise compression & proper service life through specified active material balance
Dried-Charged Plates	Tank Formed & Dried Plates	Properly dried plates in a sealed battery have a virtually limitless shelf-life, while still retaining 70-80% state of charge when filled with acid
Top Lead Connections	Through-Partition-Construction, Large Straps	Shorter current path for increased electrical conductivity & higher starting currents, heavier parts for maximum durability
Case-Cover Seal	Thermal Bonded Plastic	Air tight seal to prevent air ingress & acid seepage
Terminal- Cover Seal	Patented Poly-Seal Terminal	Eliminates acid seepage, reduces corrosion, & extends battery life
Case & Cover	Polypropylene	Superior resistance to gasoline & oil, impact resistant in extreme weather conditions
Additive	Sulfate Stop (Some models)	Sulfate stop added to reduce the solubility of lead into the acid, which then reduces battery sulfation potential
YuMicron		
Separator	Leaf Separator	Polyethylene leaf with glass mat sheet bonded for compression to withstand severe vibration conditions
YTX		
Separator	Absorbed Glass Mat	Absorbs acid while creating cell compression for extreme vibration resistance
Top Lead Alloy	Calcium Alloy	Increased weld strength & severe vibration resistance
Vent System	Valve & Flame Arrestor	Valve relieves excess pressure to prevent bursting, flame arrestor frit prevents internal combustion
High Performance Maintenance Free		
Grid System	Computer-Designed Radial Grids	Increased conductivity for higher starting wattage, increased vibration resistance
Separator	Puncture Resistant AGM Material	High puncture resistant separator for increased service in high vibration applications

The Lead Acid Battery

Let's look first at battery basics: what a battery is and how it works.

Lead acid batteries are used as a power source for vehicles that demand a constant and uninterruptible source of energy. Just about every vehicle today does. For example, street motorcycles need lights that operate when the engine isn't running. They get it from the battery. Accessories such as clocks and alarms are battery-driven.

Starting your vehicle depends on a battery.

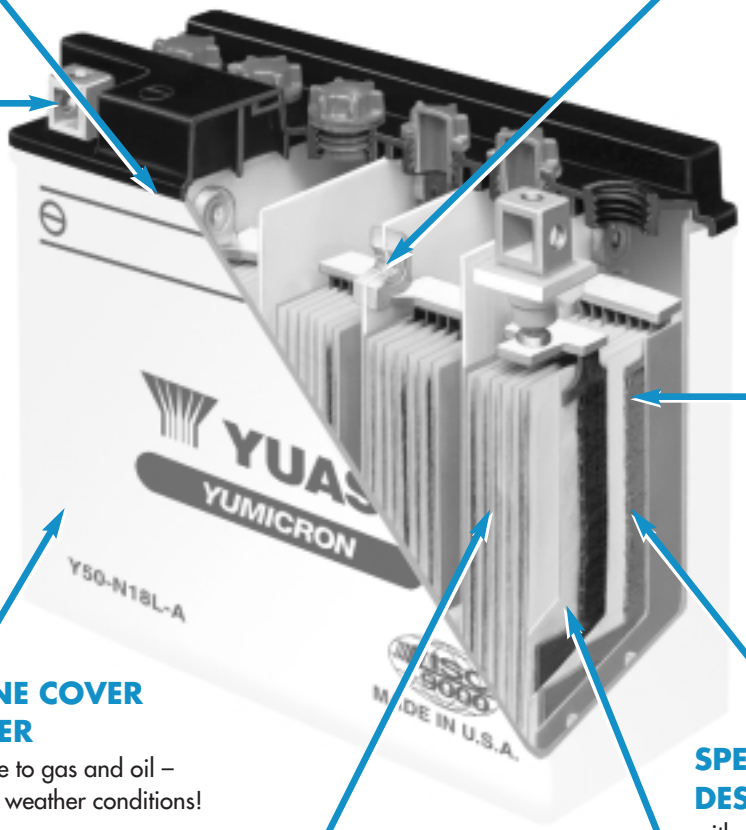
Technically speaking, the battery is an electrochemical device that converts chemical energy to electrical energy. The first thing you notice inside a battery is the cells. Each cell has about two volts (actually, 2.12 to 2.2 volts, measured on a DC scale). A 6-volt battery will have three cells. A 12-volt battery, six cells.

Standard Features

HEAT SEALED CASE TO COVER
protects against seepage and corrosion – bonded unit gives extra strength.

THRU-PARTITION CONSTRUCTION
provides shorter current path with less resistance than "over the partition" construction – you get more cranking power when you need it!

PATENTED SEALED POST
prevents acid seepage, reduces corrosion – extends battery life.



SPECIAL ACTIVE MATERIAL
is compounded to withstand vibration, prolong battery life and dependability.

POLYPROPYLENE COVER AND CONTAINER
gives greater resistance to gas and oil – and impact in extreme weather conditions!

SPECIAL GRID DESIGN
withstands severe vibration, assures maximum conductivity.

SPECIAL SEPARATOR
provides high cranking power.

HEAVY DUTY GLASS MAT
resists shedding of active material even under severe vibration.

The cells consist of lead plates that are positive and negative charged. Inside the cell they're stacked alternately – negative, positive, negative. Insulators or separators – usually fiberglass or treated paper – are placed between the plates to prevent contact. Cranking current increases as the plate surface area in the battery increases – the more plates in a cell, or the larger the plates, the greater the current capacity (or flow of electricity). Typically, capacity increases as the amount of active material increases in the battery.

The alternate plates in each cell are connected at the top into two groups, one positive and one negative. Each cell's groups of plates are then connected in series – positive to negative – to those in the next cell.

Basically, that's the internal hardware. Next, a solution of sulfuric acid and distilled water – the electrolyte – is added. And the action starts. A reaction between the lead plates and the electrolyte sets off a chemical change. This in turn creates the electrical charge in a battery.

That's the process, in a nutshell, that makes every battery work. So, are all batteries the same?

Obviously not. Actually, there can be a number of differences, and they go far beyond things like box size or terminal location. That's true for different brands, as well as for different lines produced by the same manufacturer. Take two types of YUASA batteries, for example: our Conventional and YuMicron batteries.

What's different? First there's cranking power: YuMicron has more because YuMicron batteries boost plate surface area with thin, high-tech separators that make room for two extra plates in each cell. YuMicron also has a special intercell connector that minimizes resistance to further maximize power. It has a special glass mat that resists vibration damage.

Just for the record, let's state how the Conventional and YuMicron batteries aren't different: they're both lead-antimony batteries, for openers (other batteries in YUASA's line, including the YuMicron CX, use lead-calcium technology). They have certain things in common that we think should be part of every battery: like sealed posts to resist corrosion, tough polypropylene covers and containers, and heat sealed construction for a strong, bonded unit. And both share certain design features, like special separators and through-partition construction.

Now, does all this mean YuMicron is automatically a better choice than the conventional battery? Of course not. It all depends on what you need to do. Some of the YuMicron features might not be a big deal to a lawn tractor owner, but a feature like our unique cover design that minimizes electrolyte spillage is going to be really important to the guy on a watersport vehicle or ATV.

Each YUASA line of batteries has its unique features that account for differences in price and differences in performance – and that's what makes it the right battery for a particular vehicle. Buy what you need. Don't pay for what you don't need.

POINTS TO REMEMBER

- ❒ **A battery converts chemical energy to electrical energy.**
- ❒ **Each cell has approximately 2 volts: 3 cells for a 6-volt battery, 6 cells for a 12-volt battery.**
- ❒ **Inside each cell are electrically charged positive and negative lead plates, isolated from each other by separators.**
- ❒ **Chemical action between plates and electrolyte creates an electrical charge.**
- ❒ **Current is the flow of electricity.**

The YUASA battery line...

The right battery for the right job – that's where it all starts. YUASA's comprehensive line has the right small engine starting battery... whatever the vehicle, however tough the application.

YUASA's Conventional Battery

The industry standard for motorcycles, snowmobiles and riding mowers, our Conventional Battery is anything but conventional. This workhorse is engineered to protect against seepage and corrosion... withstand vibration... and deliver high cranking power, even when the weather's dealing its worst. It's the rugged, reliable and dependable battery that customers are looking for!

These features are built into our conventional manifold vented battery... and every battery in the YUASA line:

- **Patented separators** provide high cranking power
- **Through-partition construction** delivers maximum power
- **Unique sealed posts** resist corrosion – for longer battery life
- **Polypropylene cover and container** resist damage from gas, oil, impact
- **Heat-sealed, bonded unit construction** protects against seepage and corrosion

YuMicron

Personal watercraft, snowmobiles and ATVs make special demands – and YUASA's YuMicron Battery meets them head-on. The high-tech, power-boosting design also makes YuMicron ideal for accessory-laden touring bikes and modified machines.

- **Heavy duty glass mat** resists vibration damage
- **Special thin YuMicron Separator** packs in extra plates, delivers up to 30% more cranking power than conventional types
- **Through-the-wall intercell connector** minimizes internal resistance, maximizes power
- **Sulfate Stop** curbs plate sulfation – and provides longer life

YuMicron CX

For top power, less maintenance and longer life, YuMicron CX is the battery of choice. The first motorcycle battery built on lead-calcium technology, YuMicron CX is specially designed for today's big, complex machines, where higher cranking power is a must. It delivers all the features of the standard YuMicron – plus...

- **Unique CX design** for higher cold cranking amps
- **Lead-calcium technology** reduces water loss – and servicing – by 66% compared to lead antimony
- **And, CX substantially reduces self-discharge** – for longer time between charges

Sealed (MF) VRLA and High Performance

Sealed (MF) VRLA (Valve Regulated Lead Acid) means a battery that's perfect for people who have better things to do than battery maintenance! Our permanently sealed VRLA battery never needs refilling; however, it still needs periodic charging. Ideal for motorcycles, scooters, ATVs, riding mowers and personal watercraft.

- **Spill-proof design** means virtually no possibility of leaks
- **Advanced lead-calcium technology** pumps up starting power
- **Sulfation retardant** dramatically reduces battery-killing plate sulfation
- **And, sealed VRLA batteries hold voltage** longer and need less charging in standby or storage mode
- **High Performance version** provides greater cranking power with 12 extra plates per battery

Battery Safety

As with anything, with batteries you have to know what you're doing. Batteries can be dangerous. But they don't have to be if some simple safety precautions are followed.

Basically, working with batteries poses two hazards: potentially explosive gases that are given off during charging, and sulfuric acid, which is very corrosive.

Here's an 8-point list that'll help keep those hazards under control:

1. ABSOLUTELY NO SMOKING, SPARKS OR OPEN FLAMES AROUND BATTERIES. Batteries can produce hydrogen and oxygen; if they ignite the battery can rupture.

2. On conventional batteries, loosen vent caps when charging and ventilate the entire charging area. A build-up of hydrogen and oxygen levels in the battery – or in the room where it's being charged – can create a hazard.

3. If a battery feels hot to the touch during charging, stop charging and allow it to cool before resuming. Heat damages the plates, and a battery that's too hot can rupture.

4. Never put the red sealing cap back on the battery once you take it off. If you do, gases trapped inside can explode. Make sure the vent tube isn't kinked or blocked, for the same reason.

5. Properly connect charger to battery: positive to positive, negative to negative. Unplug the charger or turn it off before you disconnect the leads; that cuts down on the chance of sparks.

6. Always wear eye protection, protective gloves and protective clothing.

7. Clean up acid spills immediately, using a water and baking soda solution to neutralize (1 lb. baking soda in 1 gal. water).

8. Make sure acid container is clearly marked and the work area is well lighted.

If sulfuric acid is swallowed or splashed in the eyes, take immediate action. While the diluted sulfuric acid used as electrolyte can burn the skin, this type of injury is generally less serious. Sulfuric acid in the eyes can cause blindness. Serious internal injuries or death can result from ingesting sulfuric acid.

Antidotes:

External – flush with water.

Internal – drink large quantities of milk or water, followed by milk of magnesia, vegetable oil or beaten eggs. Call a poison control center or doctor immediately.

Eyes – flush for several minutes with water, get immediate medical attention.

POINTS TO REMEMBER

- ❒ **Ventilate battery charging area.**
- ❒ **Charging gives off gases – no smoking, sparks or flames.**
- ❒ **Safety glasses or face shields protect against eye damage.**
- ❒ **Acid swallowed or in the eyes requires immediate antidotes and medical care.**
- ❒ **All safety considerations are important... review them frequently.**

SECTION 2

Selecting and Installing a New Battery

Selecting the Proper Battery

Selecting the right battery is an important decision. You'd be amazed how often the "problem" with a battery is that it's the wrong one for the application.

To make doubly sure you're on track, you'll need one of two things – either the latest YUASA Battery Specifications and Applications book, or the original equipment (OE) microfiche. Of course, you can always go to the old battery you're replacing. The trick, though, is to make sure it's the original. Otherwise, you may be simply repeating the same problem that caused the battery to need replacing.

OK, let's say you're replacing the battery on an '81 Kawasaki – a KZ1000-C Police, 1000cc.

Referring to the YUASA Battery Specifications and Applications book, you first look under the Kawasaki listing. Then find the right engine size – 1000cc, where you find the KZ1000-C Police. You're looking for an '81, so the place to be is '80 to '81. The chart on this page shows what it looks like.

If this were a sensor-equipped battery – which it isn't – the applications book would mark it with a footnote (†). That tells you to order it with a sensor.

What's the right battery? You'll see there are three of them: a High Performance Maintenance Free YTX20HL-BS, a Maintenance Free VRLA YTX20L-BS, and a YuMicron YB16L-B battery. Any of these will do fine. If your machine has increased compression modifications to the engine, for example, you might want the additional cranking power. And if the added benefit of never adding water again appeals to you, go with the High Performance Maintenance Free or the Maintenance Free VRLA style batteries.

A few words of advice: always double-check that you have the right battery for your application before you charge and install it. If you have any questions, check out our website at **www.yuasabatteries.com** or contact us toll free at **1-866-431-4784.**

Warning: In the event you want to upgrade to a sealed VRLA battery, please ensure you have the proper charging voltage. Always refer to your service manual.

MOTORCYCLE

cc	Model	Year	High Performance Maintenance Free	Maintenance Free VRLA	YuMicron	Conventional
KAWASAKI						
1000	KZ1000-P Police	'02-'03	YTX20HL-BS	YTX20L-BS	-	-
	KZ1000-P Police	'82-'01	YTX20HL-BS *	YTX20L-BS *	YB18L-A	-
	KZ1000-C Police	'80-'81	YTX20HL-BS *	YTX20L-BS *	YB16L-B	-
	KZ1000-C Police, Z1-R	'78-'79	YTX14AHL-BS	-	YB14L-A2	-
	KZ1000, LTD	'77-'80	YTX14AHL-BS	-	YB14L-A2	-
	KZ1000-E ST, Shaft	'79-'80	YTX20HL-BS *	YTX20L-BS *	YB16L-B	-
	KZ1000-G Classic	'80	YTX14AHL-BS	-	YB14L-A2	-
	KZ1000, LTD, CSR	'81-'83	YTX20HL-BS *	YTX20L-BS *	YB18L-A	-
	KZ1000-R Replica	'82-'83	YTX20HL-BS *	YTX20L-BS *	YB18L-A	-
	Z1000	'03-'04	-	YTX9-BS	-	-

POINTS TO REMEMBER

- ❒ **Check current Applications Book or microfiche for right replacement battery.**
- ❒ **There may be two or more "right" batteries – choose by performance needs.**
- ❒ **Double check numbers before activation and installation.**

About Sensors

Many of today's motorcycles use batteries equipped with sensors. They're either built in the battery, or packed with it.

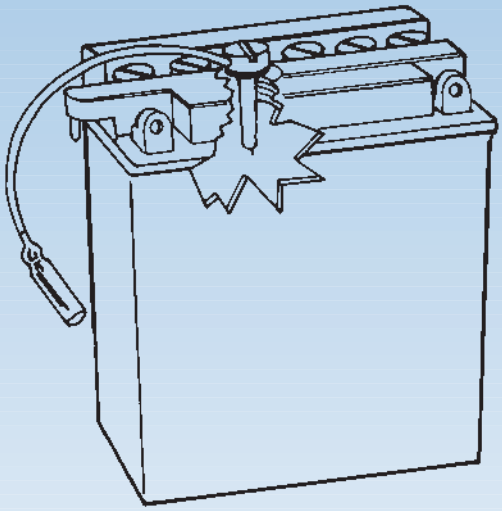
A sensor is a "low fuel" warning light. It tells you when you're getting low – in this case, on electrolyte. The sensor causes a warning light to flash, signaling that it's time to add water to the battery. The cutaway views below show what a sensor looks like.

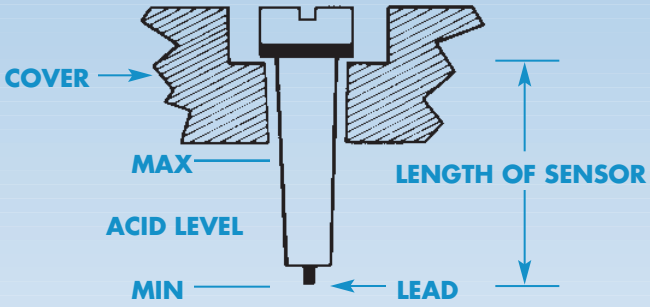
Sensors are sort of particular: they don't go with just any battery. Which means it's important to replace the old battery and sensor with the correct YUASA sensor battery listed in the applications book. So, sensor rule one is this: replace both battery and sensor at the same time.

"But the sensor's original equipment," you say. Doesn't matter. Being OE doesn't mean it 's OK in another manufacturer's battery. In fact, OE sensor plugs vary considerably in length, size and diameter. A plug that's too long can short out a battery and mess up the electrical system. If the plug's short, the warning light will flash way too early.

Note, too, that even YUASA's sensor batteries are not interchangeable; they have different vent locations, sensor wire lengths and diameter of cylinder connectors.

CUT-AWAY VIEW OF SENSOR





POINTS TO REMEMBER

- ❒ **Replace battery and sensor at same time.**
- ❒ **Original equipment sensor isn't "OK" for a new battery.**
- ❒ **Sensor batteries and sensors are not interchangeable – check Applications Book.**

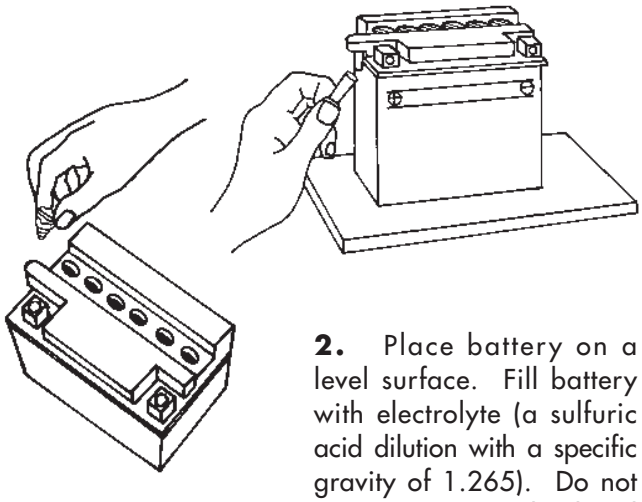
Battery Activation for Conventional and YuMicron Types

Sealed at the factory, a new YUASA battery has an indefinite shelf life as long as it remains sealed, with the red cap in place, and is stored at room temperature. Once it's unsealed, a battery should be activated, charged and installed. The plates of an unsealed, uncharged battery begin to oxidize. That makes it more difficult to charge later. (We talk more about sulfation later in this book.) And if it's charged and sits around, it starts to discharge and sulfate; how fast depends on temperature.

Here are the steps for activating most batteries, including YUASA's Conventional, YuMicron, YuMicron CX. (Sealed VRLA – YT or YI – batteries are activated differently, see page 26.)

Activating Standard Batteries

1. Right before adding electrolyte, remove filling plugs. Also remove the sealing tube – the red cap – and throw it away. (Putting this cap back on after the battery's filled with acid can cause an explosion.)



2. Place battery on a level surface. Fill battery with electrolyte (a sulfuric acid dilution with a specific gravity of 1.265). Do not use water or any other liquid to activate.

Electrolyte should be between 60°F and 86°F before filling. Fill to UPPER LEVEL as indicated on battery.

NOTE: **Never** activate a battery on the vehicle. Electrolyte spillage can cause damage.

3. Let battery stand for at least 30 minutes. Move or gently tap the battery so that any air bubbles between the plates will be expelled. If acid level has fallen, refill with acid to upper level.

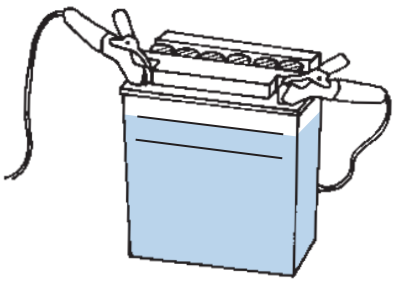
4. A battery must be completely charged before installation. Charge for three to five hours at the current equivalent of 1/10 of its rated capacity found in the Yuasa Applications Book.

YUMICRON Battery Specifications

BATTERY TYPE	CAPACITY AH (10H-R)	DIMENSIONS – INCHES (± 1/16 IN)		
		L	W	H
YB2.5L-C	2.5	3 3/16	2 3/4	4 1/8
YB2.5L-C-1	2.5	3 3/16	2 3/4	4 1/8
YB3L-A	3	3 7/8	2 1/4	4 3/8
YB3L-B	3	3 7/8	2 1/4	4 3/8
YB4L-A	4	4 3/4	2 3/4	3 5/8
YB4L-B	4	4 3/4	2 3/4	3 5/8
YB5L-B	5	4 3/4	2 3/8	5 1/8

Rated Capacity

5. During charging, batteries can spit electrolyte out the open vent. Take care to loosely refit vent caps.



6. Check during initial charging to see if electrolyte level has fallen, and if so, fill with acid to the UPPER LEVEL. After adding, charge for another hour at same rate as above to mix water and acid. Note: this is the last time electrolyte should be added, but distilled water should be added as required.

7. When charging's done, replace plugs firmly. Do not apply excessive pressure. Finger tighten only. Do not over-tighten.

8. Wash off spilled acid with water and baking soda solution, paying particular attention that any acid is washed off the terminals. Dry the battery case.

SECTION 3

Inspecting, Testing and Charging

The Discharge – Charge Cycle

As we mentioned earlier, an electrochemical action within the battery produces electricity. To understand it, let's look inside a battery again: you'll see cells made up of lead plates. Some plates are positive charged. Others are negative charged. There's also the electrolyte – a sulfuric acid solution that conducts the current. It sets off the chemical process that takes place in the battery.

So what goes on when a battery discharges?

The electrolyte reacts chemically with the lead plates – and it's not exactly a match made in heaven: it turns them into lead sulfate. If sulfate reminds you of sulfation, you're right on target: this build-up of sulfate crystals is exactly what battery-killing sulfation is.

In the process, the electrolyte – which contains hydrogen, sulfur and oxygen – gives up its sulfur and some of its oxygen. The electrolyte turns to water. Now you know why a discharged battery – filled with water instead of electrolyte – can turn into an ice block when the temperature drops even into the 20s. On the other hand, a properly-charged battery won't freeze until the mercury gets way down in the minus range.

The chemical process causes free electrons to slowly gather on the negative plates. They just hang there until a load is placed on the battery – a light or starter's switched on – which causes a swarm of electrons to rush to the positive plates.

If the chemical process just went on and on, unchecked, the lead plates would soon turn totally to lead sulfate, the electrolyte would become pure water, and the chemical and electrical activity inside the battery would come to a standstill. It's bad for a battery. So is allowing a battery to remain discharged for a prolonged period. Recharging becomes hard or impossible.

The good news: except in extreme cases, the process of discharging can be reversed. You work that magic by putting a larger voltage on the battery – for example, 14v on a 12v battery. That's charging.

Here's what goes on when a battery charges:

The electrical charge flowing back in causes the lead sulfates to send their sulfate back into the electrolyte. As a result, both the electrolyte and the plates return to their original composition.

You'll notice bubbles in an actively-charging battery. That's called gassing. It occurs because hydrogen and oxygen gases are liberated as the charging current breaks down the water.

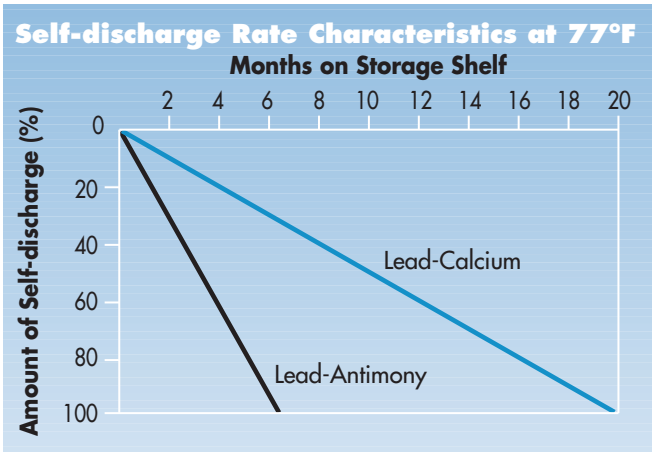
Several things are actually happening here. The process breaks down water into hydrogen and oxygen vapor, which escapes out the vent tube. You have to replace that loss. Add distilled water to each cell after charging. Then give the battery a "mixing charge" for another hour. The hydrogen and oxygen gases that are given off can also build up pressure in the battery – which is why batteries are vented, and why the vent tubes can't be bent or blocked. Very importantly, hydrogen and oxygen are very explosive. It bears repeating that sparks, flames and cigarettes around charging batteries can be a one-way ticket to trouble.

POINTS TO REMEMBER

- ❒ **Deep discharge or prolonged discharge leads to harmful sulfation.**
- ❒ **A discharged battery freezes much faster than a charged battery.**
- ❒ **Charging can reverse discharging.**
- ❒ **Charging gives off hydrogen and oxygen, which are explosive.**

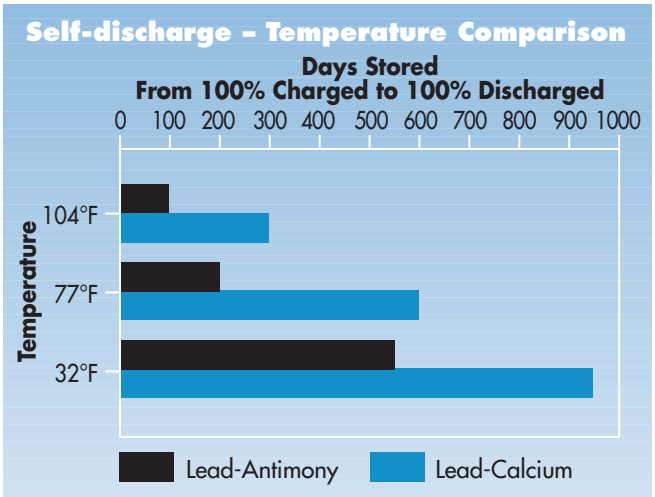
Reasons for Self-discharge

Batteries have a natural tendency to discharge. There are a number of reasons why: self-discharge, high temperatures, drain from electrical accessories on a vehicle, and short trips that aren't enough to recharge the battery.

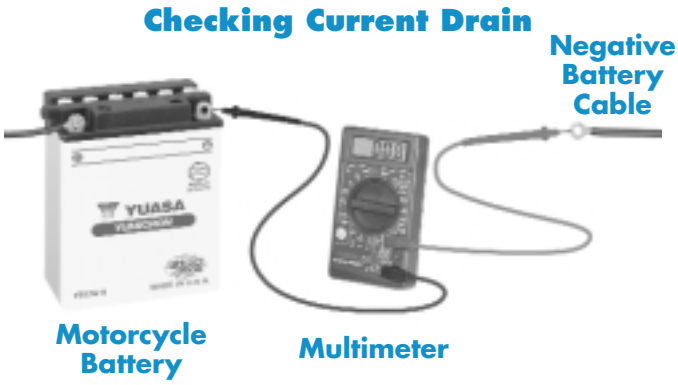

Self-discharge Rate Characteristics at 77°F
Months on Storage Shelf
2 4 6 8 10 12 14 16 18 20
Amount of Self-discharge (%)
0 20 40 60 80 100
Lead-Calcium
Lead-Antimony

Self-Discharge: Self-discharge goes on all the time. It's a battery fact of life that they get weaker from "just sitting." How rapidly batteries self-discharge depends, first of all, on battery type. Lead-calcium batteries, such as YUASA's CX, YT, YI, discharge more slowly than conventional batteries. At room temperature lead-calcium discharges at 1/300 volt per day. Conventional lead-antimony batteries discharge at 1/100 volt per day.

Temperature: Outside temperature plays a big part, too. As the mercury goes up, batteries discharge faster. Particularly in hot climates, that can mean trouble: every 18°F doubles the discharge rate, so a battery at 95°F discharges twice as fast as one at 77°F. And temperatures of 130°F are battery-killing. Been in a closed-up garage or storage building on a hot summer day recently? In many parts of the country, it's no trick for inside temperatures to reach that.



Accessories: Electrical accessories on some of today's newer and bigger bikes – clocks and computer memory, for example – will discharge the battery continuously, even when the ignition's off. The drain can be considerable. You can find out the drain, in milli-amperes, by disconnecting the negative terminal and putting a multimeter in line. It should look like this:



Keep in mind that at the same time accessories are drawing on the battery, the battery's self-discharging, too. The charts below show how fast a battery is discharged by self-discharge and by current drain:

Self-discharge

Temperature	Approx. Number of Days From 100% Charged to 100% Discharged	
	Lead-Antimony Battery	Lead-Calcium Battery
104°F	100 Days	300 Days
77°F	200 Days	600 Days
32°F	550 Days	950 Days

Current Drain (Y50-N18L-A)

Discharging Ampere	Days From 100% Charged to 50% Discharged	Days From 100% Charged to 100% Discharged
7 mA	60 Days	119 Days
10 mA	42 Days	83 Days
15 mA	28 Days	56 Days
20 mA	21 Days	42 Days
30 mA	14 Days	28 Days

Current Drain

12 Days x 0.030 Amps x 24 Hours = 8.64 AH

8.64 AH ÷ 20 AH (Y50-N18L-A) = **43.0% Available Capacity**

PLUS (+)

Self-discharge

12 Days ÷ 200 Days to 100% Loss = **6.0% Available Capacity**

Total Loss

Current Drain	**43.0% Available Capacity**
Self-discharge	**+6.0% Available Capacity**
Loss in 12 Days	**49.0% Available Capacity**

Let's see what happens as the two work together to discharge a battery:

The battery, starting out 100% charged, has a 30mA discharge rate from electrical accessories on the motorcycle.

At an average outdoor temperature of 77°F a lead-antimony battery loses about half its capacity in only 12 days due to the combination of self-discharge and current drain. In another 12 days, it's completely dead. In other words, it doesn't take long for the double whammy of self-discharge/accessory drain to knock out a battery for good.

If current drain is measurable when the motorcycle is turned off, you can do one of two things: disconnect the battery when the vehicle is in storage, or charge the battery every two weeks to a full charge. However, cycling – or continually recharging the battery – will shorten its life. Check the battery's condition with either a hydrometer or voltmeter (or a multimeter). The section on Testing a Battery has details.

Short Trips: What if you use the vehicle now and then – a couple of times a week for errands, or even daily for a short trip to work?

You can't assume that occasional use or short trips (under 15 or 20 miles) will keep the battery charged. In fact, they're probably going to add to drain, because the bike's charging system doesn't have enough time to make up for losses from normal starting and self-discharge. You're going to have to charge the battery more often. Maybe every month or so, depending on temperature.

Does the surface the vehicle's parked on, or a battery's sitting on, contribute to how well it holds a charge? You sometimes hear "experts" say parking on concrete will accelerate discharge. Bet them it's not so. Then collect. Concrete, macadam, wood, dirt, stones, sand – makes no difference. A battery discharges at the same rate, no matter what surface it's on.

And here's a hint: if a battery suddenly dies and there's no apparent reason for it, check the electrical system before you buy a new battery. One of life's little letdowns is to shell out dollars for a new battery when you didn't need to – and then still have the problem.

POINTS TO REMEMBER

- ❒ **Conventional lead-antimony batteries discharge @ 1/100 volt per day.**
- ❒ **Lead-calcium batteries discharge more slowly @ 1/300 volt per day.**
- ❒ **Higher temperatures mean faster discharge.**
- ❒ **Temperatures over 130°F kill batteries.**
- ❒ **Self-discharge and short trips cause drain.**
- ❒ **The more electrical accessories you add to a bike, the greater the current drain.**

Ampere-Hour and Cold Cranking Amps

There are two battery ratings you need to know: capacity, or ampere-hour rating, and cold cranking amps, or cold start rating.

Ampere-hour rating (in the YUASA Applications book it's abbreviated as AH) is a battery's ability to deliver current for an extended period of time. Because low temperatures slow down the chemical reaction inside a battery, a battery will have a lower ampere-hour rating in cold temperatures than in warm ones.

Most small engine batteries are rated at 10 hours. That says they have to last at a given discharge rate that long. **A 14 ampere-hour battery, for example, discharges at a rate of 1.4 ampere-hours for 10 hours.** At this point, cell voltage has dropped to 1.75v per cell (10.5v for a 12v battery, or 5.25v for a 6v battery). Usually, the larger the plates, the greater the ampere-hour rating.

Cold start rating – the high rate or the cold cranking amps, abbreviated C.C.A. in the YUASA applications book – tells how well a battery can be expected to stand up to low temperatures. This rating depends on the number of plates and their surface area. The rating's arrived at by discharging a cold (0°F) battery at a high rate – for example, 150 amperes – while discharge is monitored with a voltmeter.

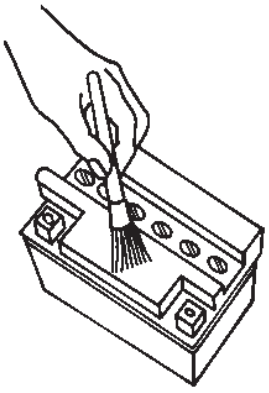
Generally, as displacement per cylinder increases, so does the cranking current – but since starting systems differ by model and manufacturer, the best advice is to check the application book for OE replacement. If a special application demands higher cranking power, select an appropriate alternate unit from the YUASA battery line. Once again, match battery features to needs. Cold start rating is important in a snowmobile. A lawn tractor owner probably doesn't care... unless he plows snow, too.

POINTS TO REMEMBER

- **Capacity or ampere-hour rating: a battery's ability to discharge current over time.**
- **Cold cranking amps measure battery high rate performance in cold weather.**

Inspecting a Battery

It's good policy to always inspect a battery before you test it. Here's how:

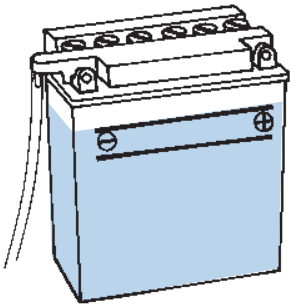


1. Make sure the battery top is clean and dry. That's not just because of looking pretty: a dirty battery actually discharges across the grime on top of the case. Use a soft brush and any grease-cutting soap or baking soda solution. Make sure plugs are finger tight so cleaning materials don't get into cells and neutralize the acid.

2. Inspect battery terminals, screws, clamps and cables for problems: breakage, corrosion or loose connections. Clean the terminals and clamps with a wire brush and coat terminals with no ox grease.

3. Inspect case for obvious damages such as cracks or for leaks; look for discoloration, warping or raised top, which may indicate that battery has overheated or been overcharged.

4. Check electrolyte level and add distilled water if necessary. Don't add acid – only water. Before any tests, charge the battery so the water and electrolyte mix.



5. Check the vent tube. Make sure it's not kinked, pinched or otherwise obstructed. On a motorcycle, it should exit away from the drive chain and from below the swing arm. Small cuts in the tube near the battery vent are OK; they're an "emergency escape" for gas in case the tube becomes obstructed.

POINTS TO REMEMBER

- ❒ **Inspect before you test.**
- ❒ **Dirt on top of case causes discharge.**
- ❒ **Look for obvious damage to battery and connectors.**
- ❒ **Add water if electrolyte is low.**
- ❒ **Make sure vent tube is clear.**

Battery Testing Devices

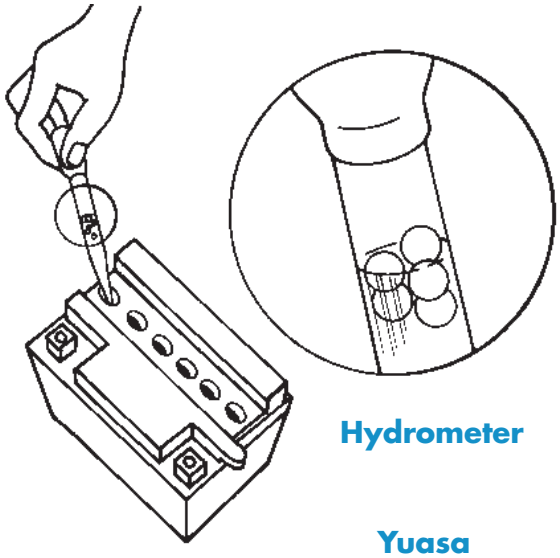
How much of a charge does a battery have? There are two easy and reliable ways to find out:
1) a hydrometer, which comes in floating ball and calibrated float types, or
2) a voltmeter (or multimeter, which gives DC voltage readings).

Which is best?

If you're choosing between two hydrometers, opt for the calibrated float type. It gives you an exact specific gravity reading (that is, the density of the electrolyte compared to water); that's much more accurate than floating balls. For readings on calibrated float and floating ball hydrometers, see "Methods of Checking Battery Condition" chart on the next page.

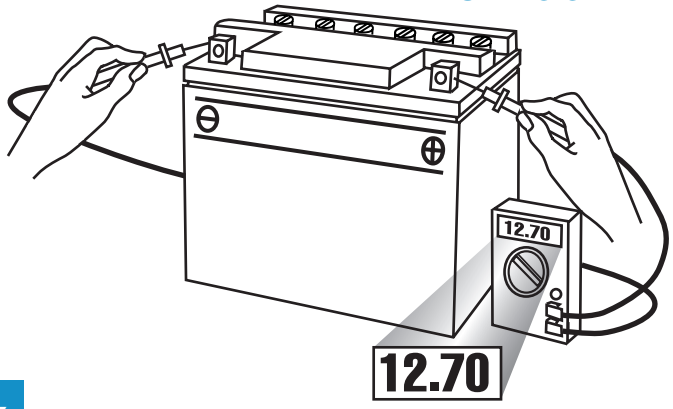
A voltmeter or multimeter can be used where a hydrometer can't. Most sealed VRLA or low maintenance batteries have to be tested with a voltmeter.

Battery testing requires a voltmeter that can measure DC voltage. Remember to always connect a voltmeter parallel to the circuit being tested, observing polarity; otherwise, the pointer will travel in the wrong direction. It's a good idea to periodically check a voltmeter against another one of known accuracy.



Hydrometer

Yuasa Multimeter



Battery Testing

There are two types of battery tests: **unloaded** and **loaded**. An unloaded test is made on a battery without discharging current. It's simplest and most commonly used. If you need a precise reading, loaded testing is the answer. It's more accurate.

UNLOADED TESTING: Check charge condition using either a hydrometer or voltmeter. With a voltmeter, voltage readings appear instantly to show the state of charge. Remember to hook the positive lead to the battery's positive terminal, and the negative lead to the negative terminal.

A hydrometer measures the specific gravity of each cell. **The specific gravity tells the degree of charge; generally, a specific gravity of about 1.265 to 1.280 indicates a full charge.** A reading of 1.230 to 1.260 indicates the battery should be charged before testing. The chart below shows the charge level as measured by syringe float hydrometer, digital voltmeter and five-ball hydrometer.

Methods of Checking Battery Condition

State of Charge	Syringe Hydrometer	Digital Voltmeter	5-Ball Hydrometer
100% Charged w/Sulfate Stop	1.280	12.80v	5 Balls Floating
100% Charged	1.265	12.60v	4 Balls Floating
75% Charged	1.210	12.40v	3 Balls Floating
50% Charged	1.160	12.10v	2 Balls Floating
25% Charged	1.120	11.90v	1 Balls Floating
0% Charged	less than 1.100	less than 11.80v	0 Balls Floating

A battery's specific gravity changes with temperature. Ideally, readings should be taken at 77°F. Is it really going to matter if you're off a couple of degrees one way or another? Probably not. If you're working somewhere that's uncomfortably hot or cold, it's time to use the old conversion factors: add .001 to the specific gravity reading for each 3°F above 77°F or subtract .001 from the specific gravity reading for each 3°F below 77°F. Cell voltage can be found by adding .84 to the specific gravity.

Note, too, that YUASA's "Sulfate Stop," a chemical additive that increases battery life by drastically reducing sulfate buildup, changes the specific gravity readings; they'll be higher than with ordinary batteries.

Test sealed VRLA types with a voltmeter or multimeter. If the stabilized open circuit voltage is below 12.5v, the battery needs charging. For a stabilized open circuit reading, first allow the battery to remain in an open circuit condition for at least 1 - 2 hours.

LOADED TESTING: There are two types of loaded tests for motorcycle batteries. You'll need a voltmeter or multimeter.

Low-load test: Basically, this means turning on the bike's lights and taking a voltage reading at the battery. Remember, hook positive (+) to positive (+), negative (-) to negative (-). The battery in a 12v system should have at least 11.5v DC with the lights on. A 6v system should have at least 5.75v DC. If voltage drops below these levels, it's time to charge.

High-rate discharge test: This is the best test of battery condition under a starting load. Use a load testing device that has an adjustable load. Apply a load of three times the ampere-hour rating.

At 14 seconds into the test, check battery voltage: a good 12v battery will have at least 10.5v, and a good 6v battery, at least 5.25v. If the reading's low, charge.

POINTS TO REMEMBER

- ❒ **Use a voltmeter or hydrometer to test state of charge.**
- ❒ **In extreme cold or heat, you'll have to adjust hydrometer readings.**
- ❒ **Battery can be tested with or without electrical load applied.**
- ❒ **Unloaded testing is simplest.**
- ❒ **Applying a load and reading voltage at battery is more accurate.**

Chargers and Charging

There's a simple rule of thumb about batteries, and if you're a dealer or a mechanic, you know that people ignore it all the time: for a battery to operate the way it's supposed to, it has to be fully charged before it's used... and kept fully charged throughout its life.

A charger basically brings a new battery, or a battery that has been discharged, to full capacity. Plugged into a wall socket, it sends direct current, flowing in the opposite direction of the discharge, into the battery.

Charging actually reverses the destructive chemical process that goes on as a battery discharges: the lead plates and electrolyte, which were being transformed into lead sulfate and water, are restored to their original composition. If a battery has been damaged – for example, it's badly sulfated, or the plates have been damaged from overheating or freezing – it may not accept a charge.

TYPES OF CHARGERS: There are five basic types of battery chargers. With all of them, hook the positive charger lead to the positive battery terminal, and the negative to the negative. Some chargers on the market deliver a low charging voltage that can't fully charge the battery; avoid them if you're buying a charger. A 12 volt, 900 mA charger will meet most needs.

Of course, too much of a charge can be a problem, too – it can "cook" a battery. For small engine starting batteries, don't use a charge greater than 2 to 2.5 amps for maintenance purposes. A badly discharged battery with very high internal resistance may never accept a charge from a standard charger. It would then require special charging equipment.

ALWAYS OBSERVE PROPER SAFETY PRECAUTIONS WHEN CHARGING BATTERIES

TRICKLE CHARGER: This is the charger a consumer – as opposed to a battery retailer or garage – will usually have. It charges the battery at a fixed rate. Different ampere-hour batteries have different charge rates. **For most motorcycle and other small engine starting batteries, charge them at 1/10 of the rated ampere-hour values in the Yuasa Applications Book,** see example on page 12 for ratings.

Battery voltage increases with the amount of charge. Find charging time for a completely discharged battery by multiplying the ampere-hour rating by 1.3 when charging with standard current. The chart on page 21 shows the approximate time needed to fully charge lead-antimony batteries using a trickle or taper charger.

The chart on page 32 shows the approximate time needed to fully charge sealed VRLA batteries.

Test the battery during charging, and continue charging until all cells are gassing. Use either a voltmeter (or multimeter) or hydrometer. The specific gravity of the electrolyte in all cells in a fully-charged battery should come to at least 1.265 in a conventional battery and 1.280 in a YuMicron and sealed VRLA battery with Sulfate Stop.

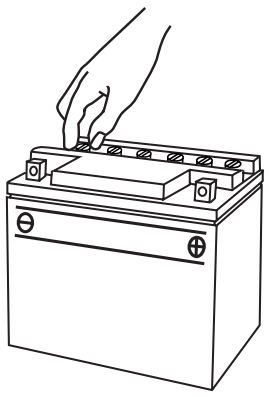
Specific Gravity Reading Using a Hydrometer

State of Charge	Electrolyte Temperature			
	80°F		40°F	
	CX & YuMicron	Conventional	CX & YuMicron	Conventional
100%	1.27/ 1.28	1.26/ 1.27	1.28/ 1.29	1.27/ 1.28
75%	1.22/ 1.23	1.21/ 1.22	1.23/ 1.24	1.22/ 1.23
50%	1.17/ 1.18	1.16/ 1.17	1.18/ 1.19	1.17/ 1.18
25%	1.13/ 1.14	1.12/ 1.13	1.14/ 1.15	1.13/ 1.14
0%	1.11/ or less	1.10/ or less	1.12/ or less	1.11/ or less

During charging, check the electrolyte level periodically and add water – preferably distilled – to keep the electrolyte level up to the line. If the battery becomes hot to the touch, stop charging. Resume after it has cooled.

Note that permanently sealed batteries – YUASA's sealed VRLA battery, for example – generally can be tested only with a voltmeter or multimeter. These batteries are fully charged when the voltage peaks and then begins to fall.

Unless using an automatic charger, do not hook a battery to a trickle charger and leave it unchecked for longer than overnight. After about eight hours maximum, careful monitoring is required.



Caps need to be replaced finger tightened after charging's done.

TAPER CHARGER: Similar to the trickle charger, the automatic taper charger charges at a fixed voltage. As the battery's voltage increases with the amount of charge, the current drops accordingly.

A drawback of both the automatic taper and trickle chargers is speed... they don't have it. As the chart on page 21 shows, it can take days to bring a discharged battery up to 100%. Here, too, check batteries for overheating as they charge.

CONSTANT CURRENT CHARGER: A professional-quality charger, the constant current makes charging simple. It maintains a constant supply of current to the battery at all levels of charging. You select the charging current. As the battery voltage increases with the amount of charge, this charger automatically increases the charging voltage to maintain the current output.

CHARGER/MAINTAINER: This type of charger monitors the voltage constantly during charging and standby modes. When battery voltage reaches a specified low level, the charger/maintainer then delivers a full charge. Then when the battery gets to the specified voltage, it automatically drops to a float charge.

HIGH RATE CHARGER: Not for use with small engine starting batteries. They force a high current into the battery, which can lead to overheating and plate damage.

Battery Voltage Reading Using a Voltmeter

State of Charge	Sealed VRLA	CX & YuMicron	Conventional
100%	13.0v	12.7v	12.6v
75%	12.8v	12.5v	12.4v
50%	12.5v	12.2v	12.1v
25%	12.2v	12.0v	11.9v
0%	12.0v or less	11.9v or less	11.8v or less

POINTS TO REMEMBER

- ❒ **Fully charge battery when new and keep it fully charged.**
- ❒ **Test charging batteries as necessary for overheating, water and state of charge.**
- ❒ **Trickle and taper chargers are generally slow.**
- ❒ **Constant current and pulse chargers are professional quality.**
- ❒ **High rate charger can cause battery damage.**

Charging a New Standard Battery

The most important thing to remember about charging a new battery is do it!

A battery out of the box with only adding electrolyte is approximately 80% charged. Our recommendation is to initial charge, bringing the battery to 100% before use. This completes the electrochemical process. However, a long ride with a regulated charging system may also bring the battery's capacity to a higher level.

Note: See "Section 5" for charging sealed VRLA batteries.

The rule of thumb is to charge a new battery for three to five hours at a rate equal to 1/10 of its rated capacity. But there are a lot of exceptions to that rule, as this table shows:

Quick Charges

What about quick charging? The quick answer is **don't.** We don't recommend it, and here's why: only the surface area of the battery plates can be quick charged. A lower current charges the battery more uniformly. That means better performance. Also, excessive charging rates increase the chance of overheating, which can mean battery damage.

Charging Times

State of Charge	Battery Types 12N10	12N12	12N14	YB18	YB16	Y50
Approximate Charge Times (Hours) Using a "Trickle" (0.25 Amp) Charger						
75%	13	15	18	23	24	25
50%	25	30	35	45	48	50
25%	38	45	53	68	71	75
0%	50	60	70	90	95	100
Approximate Charge Times (Hours) Using a 1 Amp Taper Charger						
75%	6	7	8	10	10	11
50%	11	13	14	18	19	20
25%	15	18	20	26	27	28
0%	20	23	27	34	35	37
Approximate Charge Times (Hours) Using a 1 Amp Constant Current Charger						
75%	3	4	4	6	6	6
50%	6	8	9	11	12	13
25%	9	11	13	17	18	19
0%	13	15	18	23	24	25

POINTS TO REMEMBER

- ❒ **A new battery after activation is approximately 80% charged.**
- ❒ **Initial charging is always recommended. NEVER quick charge.**
- ❒ **Charge a new battery at a rate equal to 1/10 of its rated capacity.**

SECTION 4

Maintenance and Storage

Monthly Maintenance for Conventional and YuMicron Types

Batteries don't demand a lot of attention. But not giving your battery the attention it needs can leave you stranded... or poorer by the cost of a new battery.

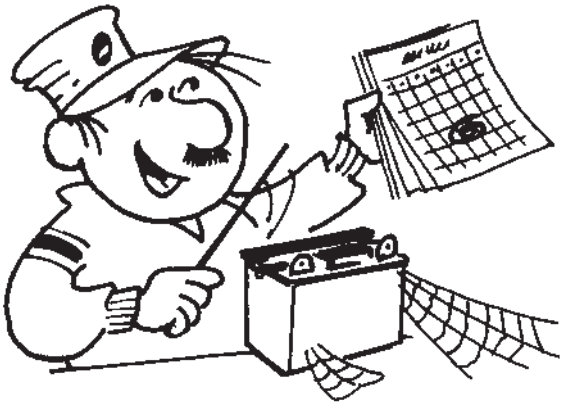
How often should you maintain a battery? About monthly under usual conditions. However, recharging is necessary when lights get dim, when the starter sounds weak, or when the battery isn't used for more than two weeks.

Important as it is, there's really not much to battery maintenance. Basically, just follow the procedure outlined in the section "Inspecting a Battery."

That means:

- Check electrolyte level.
- Keep the top free of grime.
- Check cables, clamps and case for obvious damage or loose connections.
- Clean terminals and connectors as necessary.
- Make sure exhaust tube is free of kinks or clogs.
- Replace caps, **finger tighten only.**

Then, test the battery with either a hydrometer or voltmeter. Keep it charged to 100%.



Storage

If the vehicle is in storage or used infrequently, disconnect the battery cable. That eliminates drain from electrical equipment. Check battery every two weeks and charge as necessary.

For extended storage, remove the battery from the vehicle and charge to 100%. Charge the battery every month if stored at temperatures below 60°F. Charge every two weeks if stored in a warm area (above 60°F). Make sure batteries are stored out of reach of children.

Sulfation and Freezing

Two of the biggest battery killers – sulfation and freezing – aren't a problem if the battery is properly maintained and water level is kept where it should be.
Sulfation: This happens because of 1) continuous discharging, or 2) low electrolyte levels.

Let's back up just a minute: we said earlier that discharge turns the lead plates into lead sulfate. This lead sulfate is actually a crystal. If the discharge continues uninterrupted, the sulfate crystals grow and blossom into sulfation – and a problem. The section titled "Reasons for Self-discharge" has the gory details.

Much the same happens if the fluid level is too low, which exposes the plates to air. Then the active lead material oxidizes and sulfates, and it doesn't take long before it won't hold a charge. (Low electrolyte levels cause another problem, too: acid in the electrolyte becomes more concentrated, causing material to corrode and fall to the bottom. In sufficient quantity, it will short out the battery.)

Keeping a battery charged, disconnecting the battery cable during storage, and keeping electrolyte levels up eliminate the problem. For added protection, YUASA's YuMicron, YuMicron CX and Sealed VRLA batteries are treated with a special chemical formula called "Sulfate Stop." This dramatically reduces sulfate crystal buildup on plates. The result: longer battery life.

How good is Sulfate Stop?

We simulated a constant discharge condition on two batteries with a 10-watt bulb.

Even after being totally drained for a week, the battery with Sulfate Stop made a 90% recovery.

The untreated battery: useless.

Freezing: It shouldn't bother you – unless a battery is inadequately charged. Looking one more time at the discharge process, remember that electrolyte acid becomes water as discharge occurs. Now, it takes Arctic temperatures to freeze acid. But water... as we all know, freezing starts at 32°F. A sign of this is mossing – little red lines on the plates. Freezing can also crack the case and buckle the plates, which means the battery is permanently damaged.

A fully-charged battery can be stored at sub-freezing temperatures with no damage. As the chart at right shows, it takes -75°F to freeze electrolyte in a charged battery. But at just a couple degrees below freezing – at +27°F – a discharged battery's electrolyte turns to ice. That's a difference of more than 100°F between the low temperatures a charged and discharged battery can stand.

At temperatures such as these, incidentally, the self-discharge rate of a battery is so low that a recharge usually isn't needed for months. But to stay on the safe side, test.

Electrolyte Freezing Points

Specific Gravity of Electrolyte	Freezing Point
1.265	-75°F
1.225	-35°F
1.200	-17°F
1.150	+ 5°F
1.100	+18°F
1.050	+27°F

POINTS TO REMEMBER

- ❒ **Monthly maintenance and testing are a must.**
- ❒ **Most important: make sure battery is charged and fluid level is correct.**
- ❒ **Disconnect cables or pull battery for storage.**
- ❒ **Keep fully charged to prevent sulfation and freezing.**

SECTION 5

Sealed VRLA Batteries

New Generation Battery Technology

Yuasa's innovative sealed VRLA (Valve Regulated Lead Acid) batteries are a new generation made possible by advanced gas recombinant technology. These include the YT and YI series batteries. We refer to them as "sealed VRLA batteries" here.

Sealed VRLA batteries are easy to activate and maintain. But, keep these points in mind:

1. There are important differences in activating a sealed VRLA battery. Be sure to follow the instructions in this section.

2. While Yuasa sealed VRLA batteries dramatically reduce the need for maintenance, they do need periodic charging. It's important to remember this and to know how to go about it.

3. When considering upgrading to a sealed VRLA battery that did not come OE in your vehicle, **check to make sure your charging system has a regulated output between 14.0 - 14.8v.**

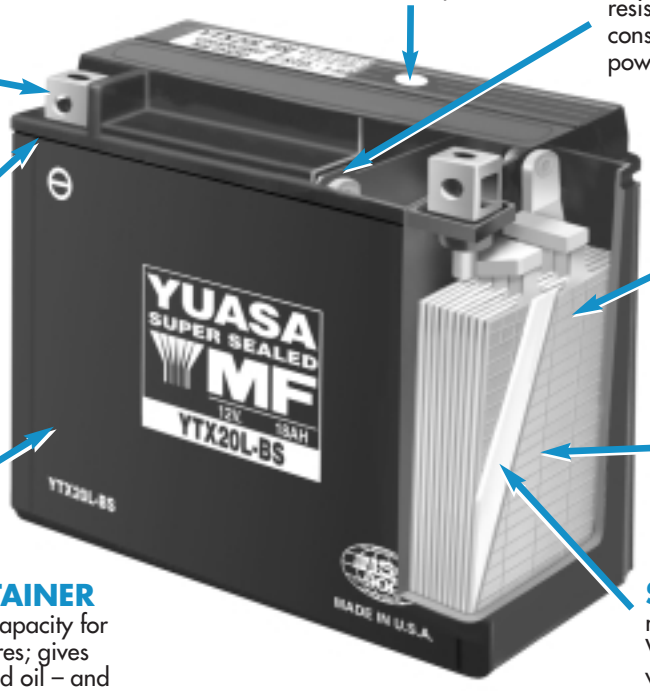
Let's take a closer look at Yuasa's innovative sealed VRLA batteries… and what makes them special.

Features

The sealed VRLA battery is the battery for vehicles that may be stored for long periods (riding mowers, personal watercraft, or scooters or cycles during the off-season, for example), or where spills could be a problem (ATVs or personal watercraft). YUASA's sealed VRLA batteries deliver:

- **No topping** – Fill it just once, to activate. No need to check electrolyte level or add water ever again.
- **Reduced self-discharge** – Grids manufactured from a special lead-calcium alloy hold the charge longer – a real plus with storage or occasional use.
- **Easy, instant activation** – The "one-push" electrolyte container makes filling a snap.
- **Enhanced safety** – A safety valve vents gases produced by overcharging. In case of fire, the flame arrestor disk minimizes explosion risk.

SEALED VRLA BATTERY CONSTRUCTION



SAFETY VALVE/ FLAME ARRESTOR
relieves excess pressure.

THRU-PARTITION CONSTRUCTION
provides shorter current path with less resistance than "over the partition" construction – you get more cranking power when you need it!

PATENTED SEALED POST
prevents acid seepage, reduces corrosion – extends battery life.

HEAT SEALED CASE TO COVER
protects against seepage and corrosion – bonded unit gives extra strength.

SPECIAL ACTIVE MATERIAL
is compounded to withstand vibration, prolong battery life and dependability.

SPECIAL GRID DESIGN
withstands severe vibration, assures maximum conductivity.

POLYPROPYLENE COVER AND CONTAINER
assures reserve electrolyte capacity for cooler operating temperatures; gives greater resistance to gas and oil – and impact in extreme conditions!

SPECIAL SEPARATOR
makes the battery spill-proof. Valve regulated design eliminates water loss and the need to refill with acid.

- **Compact design** – High efficiency in a small package, with no vulnerable exhaust tubes or other protrusions to break or kink.

How a Sealed VRLA Battery Differs from Conventional Types

Some of a sealed VRLA battery's differences are obvious. It's noticeably more compact. The reason: no free electrolyte, making it more "volume efficient" – a fancy way of saying it can be smaller. Since the battery is filled with electrolyte just once (at activation), then sealed, you won't find a row of filling plugs. Instead, a single sealing plug strip permanently covers filler ports. Also, there are no vent tubes – after all, these batteries are sealed!

But as with any magic, there's more than meets the eye. The heart of a sealed VRLA battery is what you don't see.

1. The plates are comprised of special lead-calcium alloy grids and charged active material. Lead-calcium reduces self-discharge – the battery holds its charge longer. The construction of the sealed VRLA battery causes freed gas to recombine inside the battery instead of being vented… allowing the battery to be sealed.

2. Separators are made of a special fiber with superior heat and acid resistance. These special separators make the battery non-spillable.

3. Sealed VRLA batteries have an internal safety valve. If battery pressure soars due to accidental overcharging, it opens to release excess gas, preventing a battery rupture.

The unique design affects what happens inside the battery. The basic discharge-charge cycle is still going on… that's what makes any battery tick. But to understand what's different, let's do a little review:

A battery is basically a box containing lead plates. Some plates have a positive (+) charge, some negative (-). They're immersed in a current-conducting electrolyte solution that sets off the electrochemical process that produces electricity. Think of a battery as a machine that produces electricity through a continuous process of charging and discharging.

During discharge, sulfuric acid electrolyte solution reacts with the lead plates, turning them into lead sulfate. The electrolyte – sulfuric acid solution made up of hydrogen, sulfur and oxygen – gives up its sulfur and some of its oxygen and turns to water.

$$PbO_2 + Pb + 2\,H_2SO_4 \rightarrow 2\,PbSO_4 + 2\,H_2O$$

The process reverses with charging. Electrolytes and plates return to their original composition. The charging current breaks down water into its component gases: hydrogen (from the negatively charged plate) and oxygen (from the positive plate). Gases escape out the vent tube. With a conventional battery, water is added to replace that loss.

Here's the real secret of a sealed VRLA battery: the negative plate never becomes fully charged… so, no hydrogen gas. The positive plate still makes oxygen, but instead of being forced out the vent tube, it reacts with the charged active material to become water again. That's "gas recombinant technology." That's the magic of YUASA's non-spillable, sealed VRLA battery.

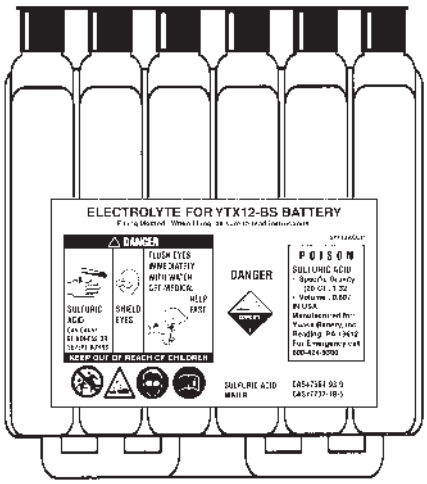
POINTS TO REMEMBER

- ❒ **Gas Recombinant technology produces a more compact battery.**
- ❒ **After activation, no need to check electrolyte or add water.**
- ❒ **Sealing strip is permanently inserted — it's never removed.**
- ❒ **Gas is recombined in the battery; there's no vented gas and vent tube.**

Activation and Installation

Activating sealed VRLA batteries is easy, although a little different from conventional activation. For problem-free start-up and operation, follow the procedure outlined here. A few things to keep in mind before you get rolling:

- **Store the battery in a cool, dry place out of direct sunlight.**
- **Do not remove the foil sheet covering the filler port until activation.**
- **After removing the electrolyte container cap strip, do not peel, pierce or otherwise open the sealed electrolyte receptacles. Don't separate the individual cells.**
- **Read electrolyte handling instruction and precautions on the label.**



- **Use only the electrolyte container that comes with the battery.** Sealed VRLA battery electrolyte is a higher concentration of sulfuric acid. All sealed VRLA battery electrolyte containers aren't the same. Each contains the proper amount of electrolyte for its specific battery.
- **Always wear plastic gloves and protective eyewear.** No Smoking, see page 9 for full safety instructions.Of course, don't forget safety precautions when storing or handling electrolyte solution.

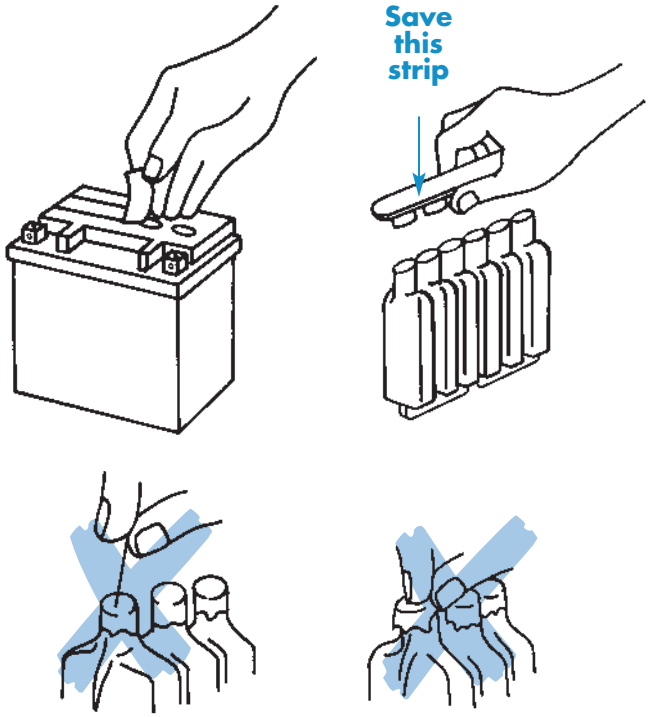
To Activate a Sealed VRLA Battery

1. Place the battery on a level surface. Battery must be out of the vehicle.

2. Remove electrolyte container from vinyl bag. Remove the strip of caps. **Put the strip aside – you'll use this later as the battery sealing plug.** Use only the dedicated container that comes with the battery. It contains the proper amount of electrolyte for your specific model – important to service life and operation. Do not pierce or otherwise open the sealed cells of the electrolyte container. Do not attempt to separate individual cells.

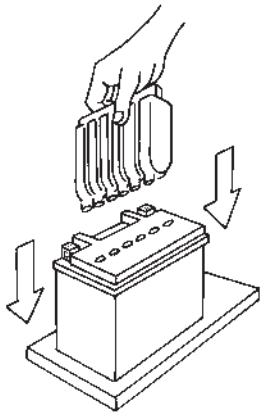
3. Place electrolyte container, sealed top of the cells down, into the filler ports of the battery. Hold the container level, push down to break the seals. You'll see air bubbles as the ports fill. ***Do not tilt the electrolyte container.***

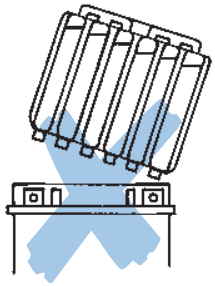
Warning: Improper activation or excessive overchargering (possibly by equipment failure) could cause damage to the battery or vehicle by forcing acid out of the safety vent.

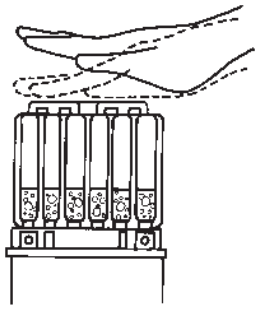


See next page.

SECTION 5 Sealed VRLA Batteries

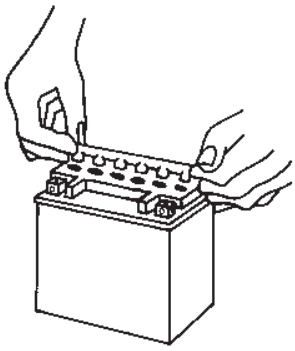


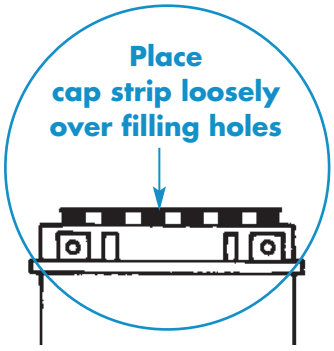




4. Check the electrolyte flow. **Keep the container in place for 20 minutes or longer until it empties completely.** If no air bubbles are coming up from the filler ports, or if container cells haven't emptied completely, tap the container a few times. Don't remove the container from the battery until it's empty. The battery requires all the electrolyte from the container for proper operation. Make sure the electrolyte container empties completely.

5. Remove the container. **For batteries 3 - 12 AH, let stand for at least 30 minutes. For batteries greater than 12 AH, allow the battery to stand a minimum of 1 HOUR.** This allows the electrolyte to permeate into the plates for optimum performance. Yuasa sealed VRLA batteries have the amp hours printed right on the front of the battery.





6. Newly activated sealed VRLA batteries require an initial charge. After adding electrolyte, a new battery is approximately 80% charged. Place cap strip loosely over the filling holes as shown in drawing above. Immediately charge your battery after the "stand" period, to bring it to a full state of charge. **See "Charging a Newly Activated Sealed VRLA Battery" on page 31.**

After charging is completed, press down firmly with both hands to seat the caps (don't pound or hammer).

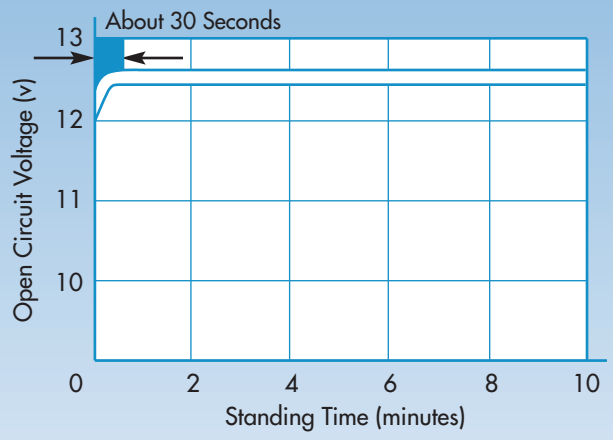
The battery is sealed. There is no need to remove the strip of caps or add electrolyte for the life of the battery.

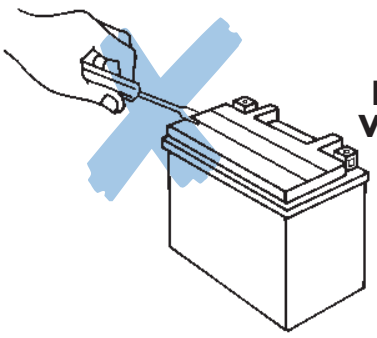
7. The graph below shows an open circuit voltage characteristic of a sealed VRLA battery just after the electrolyte is filled.

If the battery is only filled with electrolyte, but not being given a supplementary charge, the open circuit voltage will be somewhere around 12.5 to 12.6v, as shown in the graph below. The reasons for the voltage being low are that:

- **The capacity reached by filling with electrolyte is about 80% of the fully charged capacity.**
- The electrolyte around the plates gets its concentration lowered temporarily.

Open Circuit Voltage Characteristics Immediately after Electrolyte Filling





Remember: unlike a conventional battery, the sealed VRLA battery won't be topped off during its life. Never pry off sealing caps: it's dangerous and damaging.

Measuring Voltage

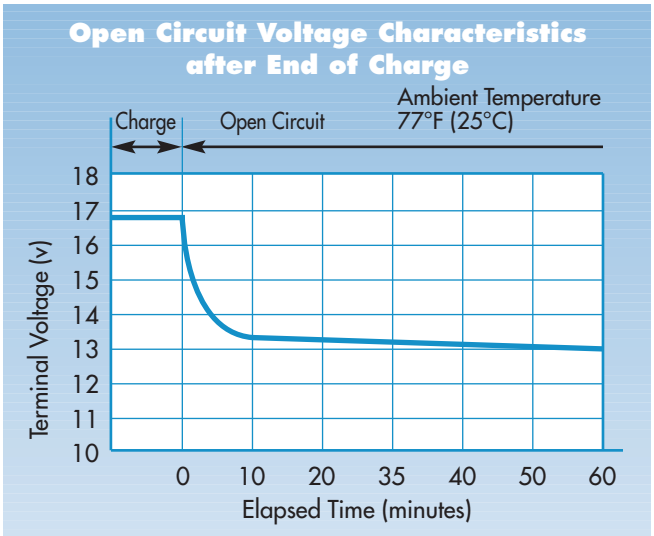
How healthy is your sealed VRLA battery? Since a sealed VRLA battery is sealed – and the sealing caps are never removed – you won't be able to check the state of the charge by the old hydrometer-and-specific-gravity test. Rather, use a voltmeter or multimeter to measure DC voltage. It should be of class 1 accuracy or better. Some basics to keep in mind:

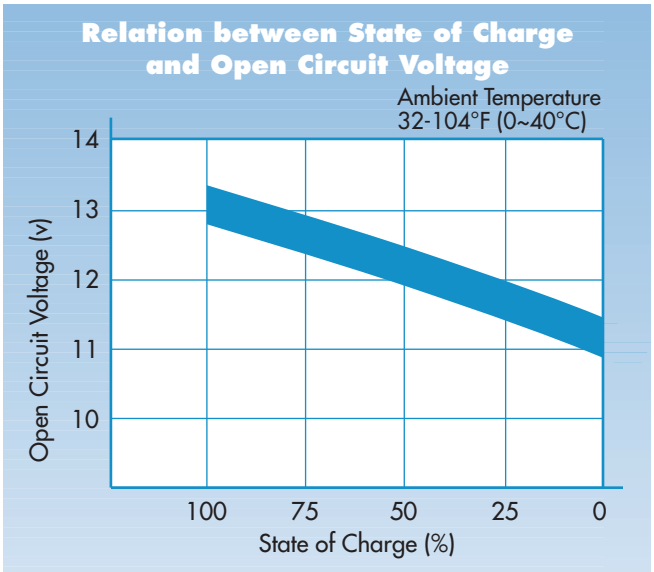
- Check voltage using a voltmeter. Readings for a charged, newly-activated battery should be 12.8v or higher after the battery is charged and **sits for at least 1 - 2 hours.** If less, it needs an additional charge.

- The graph top right shows open circuit characteristics of the sealed VRLA battery after end of charging using a constant current charger set to the standard current of the specific battery. As shown, the open circuit voltage is stabilizing 30 minutes after end of charge.

  Therefore, to determine the state of charge and the health of the battery, measure the open circuit voltage 1 hour after end of charge.

- For a battery that has been in use, refer to the graph bottom right to determine state of charge from open circuit voltage.





POINTS TO REMEMBER

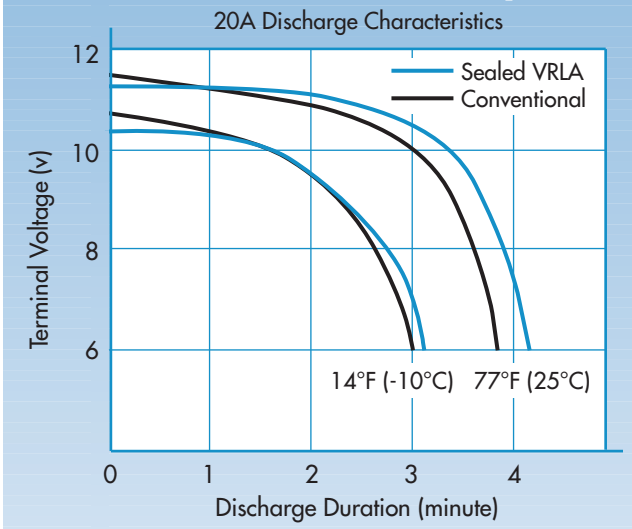
- ❒ **Use a voltmeter to determine state of charge. Because sealing caps are never removed, you can't test specific gravity.**
- ❒ **Don't use a quick charge for initial activation.**
- ❒ **A battery that has just been activated or charged needs to stabilize 1 hour for an accurate voltage reading.**

Discharge Characteristics

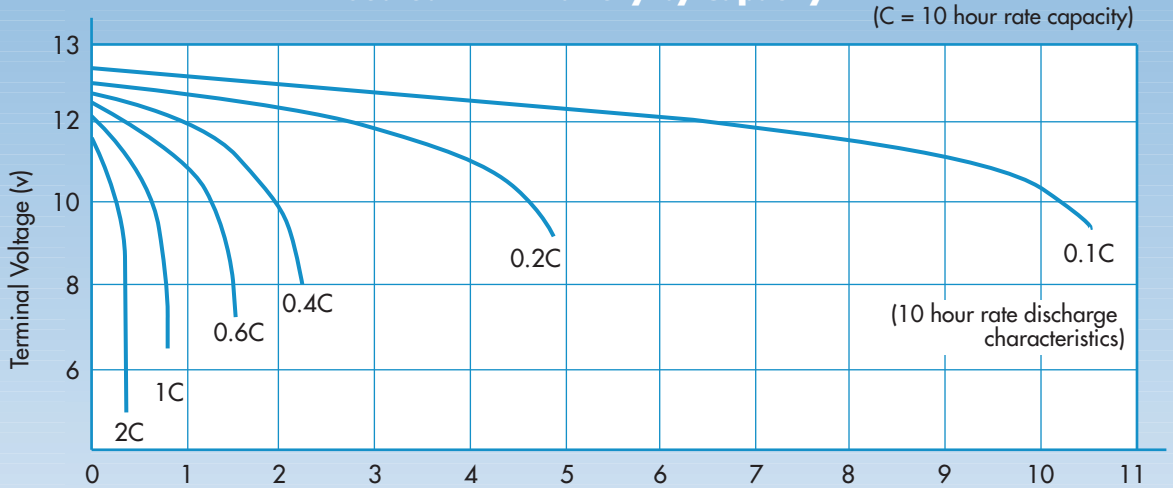
Think about what types of vehicles a sealed VRLA battery goes into: most aren't like the family car, driven day-in, day-out. They're probably used once in a while, or maybe even stored for weeks or months at a time.

That demands a special kind of battery – one with extra power to reliably start that engine, every time. In YUASA's sealed VRLA batteries, the plate groups are specially designed to deliver that. The graph to the right shows the increase in discharge time of a sealed VRLA battery compared to a conventional Yumicron battery at both cold and room temperatures. The graph below shows the cold temperature performance of the sealed VRLA battery as the load increases. "C" equals the Amp Hour Capacity Rating of the battery.

High Rate Discharge Characteristics of a Sealed VRLA 4 AH Battery



Discharge Characteristics of a Sealed VRLA Battery by Capacity



Starting the engine is a big part of the battery's job, but not all. Electrical accessories and safety systems – lights and horn – need a stable supply of electricity. Now you're concerned with the battery's "low rate discharge characteristics." This steady, low rate discharge is measured in "10-hour rate discharge." The graph above shows the discharge characteristics of YUASA's YT or YI sealed VRLA batteries at different current rates. Note that battery capacity is a function of the current being used (or discharge current) x time.

SECTION 5

Sealed VRLA Batteries

Self-discharge

Constant self-discharge is a fact of life for all batteries. They lose strength as they sit there doing nothing. The good news is that lead-calcium technology in a sealed VRLA battery slows down the self-discharge process substantially. Conventional lead-antimony batteries discharge at about 1/100 volt a day... the lead-calcium sealed VRLA battery, 1/300 volt per day. Looking at it another way, a conventional battery fully charged and stored for a month will lose roughly a third of its charge; the sealed VRLA battery handled the same way would lose about 10%.

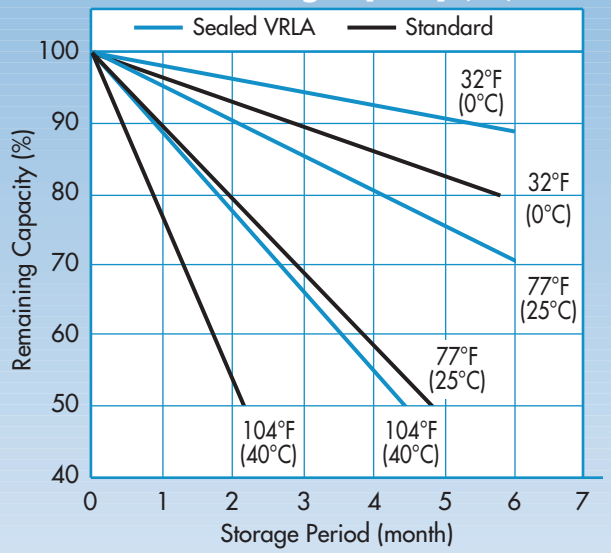
Remember, too, ambient temperature affects battery discharge. Higher the temperature, quicker the discharge – for all batteries.

So, the sealed garage or storage shed with the sun beating down on it isn't doing any favors to the battery in your vehicle. Excessive heat will prematurely shorten the life of the battery.

Some people figure sealed VRLA batteries are so good, there's no need to worry about routine charges. Flattering, but wrong. Forgetting routine charging can mean a one-way ticket to the battery graveyard.

Lead-calcium technology definitely slows self-discharge, but a combination of heat and idleness will still drain a sealed VRLA battery, like the conventional one. You'll find step-by-step charging instructions later in this section.

Self-discharge Characteristics
Relation between Storage Period (months) and Remaining Capacity (%)



POINTS TO REMEMBER

- ❒ **"High rate discharge" sealed VRLA batteries deliver extra starting power.**
- ❒ **Lead-calcium technology substantially slows self-discharge.**
- ❒ **Routine charging is required to maintain a full charge.**

Choosing a Charger

Match your sealed VRLA battery to the right charger. The wrong one can cause permanent damage and poor performance.

Yuasa offers a complete line of chargers to activate and maintain your battery to factory specifications.

- Do not use a larger than recommended amp charger to reduce charging time. That permanently damages the battery and voids the warranty.
- **To find recommended current output in amps, divide battery amp hour capacity rating by 10. Example: 14 AH ÷ 10 = 1.4 amp current.**

Yuasa sealed VRLA batteries have the amp hours printed right on the front of the battery. If you're not sure, refer to application manuals at the dealer. Select the charger that comes closest to the value of that figure.

Yuasa 900 mA Automatic Charger

Yuasa 1.5 Amp Automatic Charger

Charging a Newly Activated Sealed VRLA Battery

Sealed VRLA batteries require an initial charge. If you are using a constant current charger, refer to the standard (STD.) charging method printed on the battery. If you are using an automatic type taper charger, check to make sure that the charger current (amps) is equal to or greater than the standard (STD.) charging method listed on the battery.

CHARGING INSTRUCTIONS FOR NEWLY ACTIVATED SEALED VRLA BATTERIES

YTX20L-BS CHARGING METHOD

- THIS IS A SEALED BATTERY; THE SEALING CAPS SHOULD BE CONSIDERED PERMANENT.
- DO NOT REMOVE THE CAPS TO ADD WATER OR TO CHARGE THE BATTERY; CHARGE AT 12V AT THE AMPERAGE AND HOURS STATED BELOW.

STD.: 1.8A x 5~10h or QUICK:9.0A x 1.0h

These batteries are a sealed VRLA construction – which means:
NEVER REMOVE THE SEALING STRIP AFTER CHARGING IS COMPLETED!
If the battery gets very hot to the touch, cease charging and allow battery to cool down.

Check voltage using a voltmeter. Readings for a charged, newly-activated battery should be 12.8v or higher after the battery is charged and **sits for at least 1 - 2 hours.** If less, it needs an additional charge.

Yuasa Automatic Chargers and Accessories are the safest and most convenient method for error proof charging and battery maintenance.

Routine Charging

The single most important thing to maintaining a sealed VRLA battery is **don't let it sit discharged: keep it fully charged.** A sealed VRLA motorcycle battery should be kept to near fully charged for peak performance. In fact, it can need charging more often than a car battery because it's probably not used routinely and, therefore, not "automatically" charged.

Use the following guidelines for boost charge. Always verify battery condition before charging, and 30 minutes after charging.

- A fully charged battery should read 12.8v or higher after battery has been off the charger 1 - 2 hours.

OVERCHARGING CAN HARM YOUR BATTERY BEYOND RECOVERY.

A word on overcharging: *don't.* Because of the characteristics of a sealed VRLA battery, too much of a boost charge will decrease the volume of electrolyte. The longer the overcharge time, the greater the drop in electrolyte – and starting power.

Water can't be added to the sealed VRLA battery to make up the difference. Overcharging can warp plates, making future charging difficult or impossible. Watch charging times carefully, or ideally, use a Yuasa Automatic Charger. Always stop charging if the battery becomes really warm to the touch. Let it cool down 6 - 12 hours and resume charging.

State of Charge	Voltage	Action	Charge Time* (Using a constant current charger @ std. amps specified on the battery)
100%	12.8v - 13.0v	None Check at 3 months from date of manufacture	None Required
75% -100%	12.5v - 12.8v	May need slight charge, if no charge given, check in 3 months	3 - 6 hours
50% - 75%	12.0v - 12.5v	Needs charge	5 - 11 hours
25% - 50%	11.5v - 12.0v	Needs charge	At least 13 hours verify state of charge
0% - 25%	11.5v or less *(see special instructions on page 33)*	Needs charge	20 hours

* Charging times can vary depending on type of charger. Follow the charger's instructions.

Caution:

Always wear safety glasses and charge in a ventilated area. If battery gets really warm to the touch, discontinue charging and allow battery to cool down. No sparks, flames or smoking when charging.

Charging Instructions for Sealed VRLA Batteries with Voltage of 11.5 or Less

Batteries with voltage below 11.5v may require special equipment and procedures to recharge.

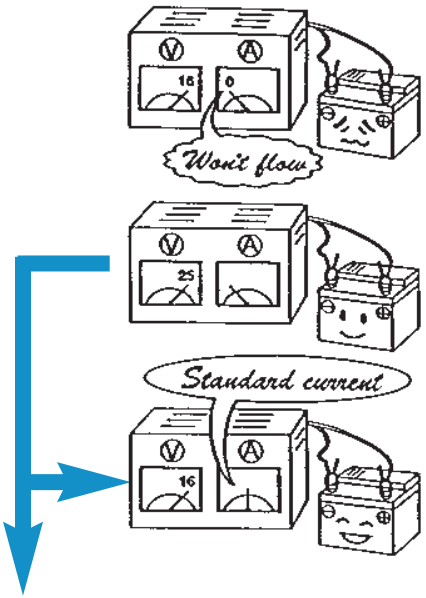
In charging an overdischarged battery having a terminal voltage of 11.5v or lower, its internal resistance may be too high to charge at a normal charge voltage. Therefore, it may be necessary to raise the voltage of the battery initially (25v as a maximum), and charge for approximately 5 minutes. If the ammeter shows no change in current after 5 minutes, you need a new battery.

Current flowing into the battery at high voltage can become excessive. Monitor amperage and adjust voltage as necessary to keep current at the battery's standard amp rating. Charge for approximately 20 hours.

How to determine battery condition after boost charge.

Determine the condition of a sealed VRLA battery at least 1 - 2 hours after the charge by measuring the terminal voltage according to the table below.

Criteria	Judgement
12.8v or higher	Good
12.0 -12.8v or lower	Charge insufficient → Recharge
12.0v or lower	Unserviceable → Replace



Adjust voltage so that current will be at standard amps after 5 minutes.

Routine Maintenance for Sealed VRLA Batteries

Check voltage periodically using a voltmeter.

- Recommended every 3 months from date of activation, or 3 months from date of manufacture for batteries activated at the factory. Keep in mind, higher storage temperatures cause faster self-discharge and require checking more often.
- If you plan to store your vehicle for an extended time, make sure your battery is fully charged.
- Fully charged should read 12.8v - 13.0v after standing 1 - 2 hours.
- When a battery is in storage, check and charge it if the voltage drops below 12.5v for YTX batteries.

Beyond that, maintenance is the same as for any battery, except you don't have to worry about electrolyte:

- Keep the battery top free of grime.
- Check cables, clamps and case for obvious damage or loose connections.
- Clean terminals and connectors as necessary.
- For storage, pull battery or disconnect battery cable.

GLOSSARY

Acid Sulfuric acid, used to describe the electrolyte or liquid in a cell.

Active Materials Materials in a battery that react chemically to produce electrical energy: they are lead peroxide (positive) and sponge lead (negative).

Activation Making a dry cell functional by adding electrolyte.

AGM Absorbed glass mat.

Air Oxidized A charged negative plate that has been removed from electrolyte and permitted to discharge in an air atmosphere. Plates must then be recharged before they are capable of producing useful electrical energy.

Alloy A combination of two or more metals. See **Antimonial Lead Alloy** and **Calcium Lead Alloy.**

Ambient Temperature The surrounding temperature, usually refers to room temperature.

Alternating Current A pulsating electric current in which direction of flow is rapidly changed, so the terminal becomes in rapid succession positive, then negative. Abbreviated *AC*.

Ammeter An instrument for measuring electrical current.

Ampacity Current carrying capacity in amperes.

Ampere The unit of electrical current equal to the steady state current produced by one volt applied across a resistance of one ohm.

Ampere-Hour A measure of the volume of electricity, being one ampere for one hour. It is used to express battery capacity, and is registered by an ampere-hour meter; it can be obtained by multiplying the current in amperes by length of time that the current is maintained.

Ampere-Hour Capacity The number of ampere-hours that can be delivered by a storage battery under specified conditions as to temperature, rate of discharge and final voltage.

Ampere-Hour Efficiency The electrochemical efficiency of a storage battery expressed as the ratio of ampere-hours output to the ampere-hours input required for recharge.

Ampere-Hour Meter An instrument that registers the quantity of electricity in ampere-hours.

Anode An electrode through which current enters any non-metallic conductor. Specifically, an electrolytic anode is an electrode at which negative ions are discharged, positive ions are formed, or at which other oxidizing reactions occur.

Antimonial Lead Alloy A commonly used alloy in battery castings. The percentage of antimony varies from 1/2% to 12%. Other substances are present in small quantities, either as inescapable impurities or by design to improve the properties of the cast part.

Antimony A hard, brittle, silver-white metal with a high luster from the arsenic family.

Assembly 1. Combining various parts into a finished battery. 2. Any particular arrangement of cells, connectors and terminals to form a battery.

Automotive Battery SLI battery of 3 or 6 cells used for starting, lighting and ignition of cars, trucks, buses, etc.

Average Voltage A storage battery's average value of voltage during a period of charge or discharge.

Battery (Storage) A connected group of two or more storage cells. Common usage applies this term to a single cell used independently.

Bridge The ribbed supporting structure in the bottom of a battery container that provides sediment space under the elements, thereby preventing short circuits.

Burning Welding together two or more lead or lead alloy parts such as plates, straps, connectors.

Burning Center The center-to-center distance between adjacent plates of the same polarity.

Burning Stick A lead or lead alloy stick used as a supply of joining material in lead burning.

Cadmium A metallic element highly resistant to corrosion, used as a protective plating on certain parts and fittings.

Cadmium Electrode A third electrode for separate measurements of the electrode potential of positive and negative plate groups.

Calcium Lead Alloy A lead base alloy that is sometimes used for battery parts in place of antimonial lead alloys.

Capacity See **Ampere Hour Capacity.**

Capacity Test A test that discharges the battery at constant current at room temperature to a cutoff voltage of usually 1.75 volts/cell.

Cast Forming a molten substance into a shape by introducing the material into a mold and allowing it to solidify.

Casting A metallic item, such as one or more grids, straps or connectors, formed by pouring a molten substance into a mold and allowing it to solidify.

Cast-On Strap A multiple connector that had been cast onto the plates directly in a combination mold/burning jig; contrasts with burning of plates and prefabricated straps.

Cathode An electrode through which current leaves any non-metallic conductor. Specifically, an electrolytic cathode is an electrode at which positive ions are discharged, or negative ions are formed, or at which other reducing actions occur.

Cell (Primary) A cell designed to produce electric current through an electrochemical reaction that is not efficiently reversible and hence the cell, when discharged, cannot be efficiently recharged by an electric current.

Cell (Storage) An electrolytic cell for generation of electric energy, in which the cell after discharge may be restored to a charged condition by an electric current flowing in a direction opposite to the flow of current when the cell discharges.

Charged A storage cell at maximum ability to deliver current. The positive plates contain a maximum of lead oxide and a minimum of lead sulfate, and the negative plates contain a maximum of sponge lead and a minimum of sulfate, and the electrolyte is at maximum specific gravity.

Charged and Dry A battery assembled with dry,charged plates and no electrolyte.

Charged and Wet A fully-charged battery containing electrolyte and ready to deliver current.

Charging The process of converting electrical energy to stored chemical energy. In the lead acid battery, it converts lead sulfate in the plates to lead peroxide (positive) or lead (negative).

Charging Rate The current, expressed in amperes, at which a battery is charged.

Circuit A system of electrical components through which an electric current is intended to flow. The continuous path of an electric current.

Cold Crank Test A test that applies a high rate of discharge to a battery at 0°F, and the 30 second cell voltage must be above 7.2v.

Constant Current Charge A charge that maintains the current at a constant value. For some types of batteries this may involve two rates, called a starting and a finishing rate.

Constant Potential Charge or Constant Voltage Charge A charge that holds the voltage at the terminals at a constant value.

Container Housing for one or more cells, commonly called a "jar."

Cover The lid of an enclosed cell, generally made of the same material as the container and through which the posts and vent plug extend.

Cover Inserts Lead or lead alloy rings molded or sealed into the cell cover, and that the element posts are burned to, thereby creating an effective acid creep-resistant seal.

Creepage Travel of electrolyte up the surface of electrodes of other parts of the cell above the level of the main body of the electrolyte.

Curing Chemical conversion process that changes lead oxides and sulfuric acid to mixtures of basic lead sulfates, basic lead carbonates, etc., which consequently forms the desired structures of lead or lead sulfate on negative and positive plates during formation.

Current The time rate of flow of electricity, normally expressed as amperes, like the flow of a stream of water.

Cut-Off Voltage See **Final Voltage.**

Cutting (of acid) Dilution of solution of sulfuric acid to a lower concentration.

Cycle A discharge and its subsequent recharge.

Cycle Service Battery operation that continuously subjects a battery to successive cycles of charge and discharge, e.g., motive power service.

Deep Discharge Removal of up to 80% of the rated capacity of a cell or battery.

Dielectric Test An electric test performed on jars, containers and other insulating materials to determine their dielectric breakdown strength.

Diffusion The intermingling or distribution of particles or molecules of a liquid.

Direct Current A one-direction current. Abbreviated *DC.*

Discharge Conversion of a battery's chemical energy into electrical energy.

Discharged A storage cell when, as a result of delivering current, the plates are sulfated, the electrolyte is exhausted, and there is little or no potential difference between the terminals.

Discharge Rate Any specified amperage rate at which a battery is discharged.

Dry Charged Battery plates that have been subjected to the dry charging process.

Dry Charging Manufacturing process in which tank-formed battery plates are washed free of acid and then dried.

Efficiency The ratio of the output of a cell or battery to the input required to restore the initial state of charge under specified conditions of temperature, current rate and final voltage.

Electrode A conductor through which current passes in or out of a cell.

Electrode (Electrolyte) Potential The difference in potential between the electrode and the immediately adjacent electrolyte, expressed in terms of some standard electrode potential difference.

Electrolysis Electrochemical reaction that causes the decomposition of a compound.

Electrolyte Any substance that disassociates into two or more ions when dissolved in water. Solutions of electrolyte conduct electricity and are decomposed by it. For batteries, electrolyte implies a dilute solution of sulfuric acid.

Electromotive Force (EMF) Electrical pressure or potential, expressed in volts.

Element An assembly of a positive plate group, negative plate group and separators.

End Gravity The specific gravity of a cell at the end of a prescribed discharge.

Energy Density Ratio of battery energy content in watt hours to battery weight in volume.

Envelope A separator folded and wrapped around a battery plate during assembly.

Equalizing Charge An extended charge given to a storage battery to ensure complete restoration of active materials in all the plates of the cells.

Expander An ingredient in the negative paste that delays shrinking and solidifying of the sponge lead of the finished plate, thereby enhancing negative plate capacity.

Ferroresonant Charger A constant volt power supply containing a special transformer-capacitor combination that changes operating characteristics as the draw is varied, ensuring that voltage output remains constant.

Filling Gravity The specific gravity of acid used to fill batteries.

Final Voltage The cut-off voltage of a battery. The prescribed voltage reached when the discharge is considered complete.

Finishing Rate The rate of charge, in amperes, to which charging current is reduced near the end of the charge for some types of batteries to prevent gassing and temperature rise.

Fixed Resistance Discharge Discharge of a cell or battery through a fixed resistive load, the current being allowed to fall off as the terminal voltage decreases.

Float Plate A pasted plate.

Float Charging A recharge at a very low rate, accomplished by connection to a buss whose voltage is slightly higher than the open circuit voltage of the battery.

Foot Projections from the grid at the bottom edge, used to support the plate group.

Formation or Forming Charge An initial charging process that electrochemically converts the raw paste of the plates into charged active material, lead peroxide in the positive plates and sponge lead in the negative plates.

Formed Plates that have undergone formation.

Freshening Charge A charge given batteries in storage to replace the standing loss and ensure that every plate is periodically brought up to full charge.

Full Charge Gravity Specific gravity of the electrolyte when cells are fully charged and properly leveled.

Gang Vent Vents for usually six adjacent cells that are connected to a common manifold.

Gassing Bubbles from gases being released at one or more of the electrodes during electrolysis.

Glass Mat Fabric made from glass fibers with a polymeric binder such as styrene or acrylic which is used to help retain positive active material.

Gravity Specific gravity.

Gravity Drop The number of points reduction or drop of specific gravity of the electrolyte from cell discharge.

Grid A metallic framework used in a battery for conducting electric current and supporting the active material.

Group One or more plates of one type – positive or negative – burned to a post or strap.

H_2SO_4 Sulfuric Acid.

High Rate On charge, any rate higher than the normal finishing rate.

Hydration (Lead) Reaction between water and lead or lead compounds. Gravities lower than those found in discharged cells are apt to produce hydration, which appears as a white coating on plate groups and separators in a cell.

Hydrometer A device used to measure density or specific gravity of electrolyte solutions.

Hydroset Curing process for plates that oxidizes the lead paste, reducing free lead to a few percent of total.

Initial Voltage The closed circuit voltage at the beginning of a discharge. It is usually measured after current has flowed for a period sufficient for the voltage rate of change to become practically constant.

Insert A bushing of lead or lead alloy molded or sealed into cell covers, and to which the post is burned to create a creep-resistant, cover-to-post seal.

Intercell Connector Conductor of lead or lead alloy used to connect two battery cells.

Internal Resistance Resistance within a cell or battery to the flow of electric current, measured by the ratio of the change in voltage to a specified change in current for a short period of time.

Jar Housing, or container, for one or more cells.

Jar Formation Forming of plates in the cell jar.

Jumper A short length of conductor used to connect or cut out part of an electrical circuit.

Kilovolt One thousand volts.

Kilowatt One thousand watts.

Kilowatt Hours A measure of energy or work accomplished, being 1000 watt hours.

Lead (Pb) Chemical element used in lead acid batteries.

Lead Burning Welding of lead or alloy parts.

Lead Hydrate A white lead compound formed by reaction of very dilute electrolyte or water and metallic lead or lead alloys.

Lead Oxide A general term for any of the lead oxides used to produce batteries.

Lead Peroxide A brown lead oxide which is the positive material in a fully formed positive plate.

Lead Plated Part Hardware that has a thin protective layer of lead electrode deposited on the surface.

Lead Sponge The chief component of the active material of a fully-charged negative plate.

Lead Sulfate A compound that results from the chemical action of sulfuric acid on oxides of lead or on lead metal.

Level Lines Horizontal lines molded or painted near tops of battery containers indicating maximum and minimum electrolyte levels.

Litharge A yellow-red oxide of lead sometimes used in making active material.

Local Action A battery's loss of otherwise usable chemical energy by currents that flow within the cell of a battery regardless of its connection to an external circuit.

Loss of Charge Capacity loss in a cell or battery standing on open circuit as a result of local action.

Lug A portion of the grid used for support of the plate group, usually a hanging lug on the top edge of the grid. Also, a tab on the grid used for connection of plate to strap and other plates.

Machine Casting A fully or semi-automatic grid or small parts casting operation.

MF (Maintenance Free Battery) A VRLA sealed absorbed glass mat (AGM) battery.

Manual Discharge Capacity test in which the operator disconnects the battery from the test load after all cells have reached the prescribed final voltage. With fixed resistance loads, boost cells are used to keep the discharge rate fairly constant as the test cell voltages drop rapidly near the final voltage. Electronic load manual discharges generally do not require boost cells.

Microporous Separator A veneer or grooved-type separator made of any material that has many microscopically small pores.

Milliampere One thousandth of an ampere.

Millivolt One thousandth of a volt.

Modified Constant Voltage Charge A charge in which charging current voltage is held substantially constant while a fixed resistance is inserted in the battery circuit, producing a rising voltage characteristic at the battery terminals as the charge progresses.

Mold A cast iron or steel form used to produce a casting of definite shape or outline.

Mold Coat A spray applied to metal molds that acts as a release agent and an insulator against rapid heat transfer.

Moss Lead crystals that can grow at high current density areas of negative plates— along edges, at feet or at plate lugs— and cause short circuiting.

Negative Plate The grid and active material that current flows to from the external circuit when a battery is discharging.

Negative Terminal The terminal from which current flows through the external circuit to the positive terminal when the cell discharges.

OHM A unit of electrical resistance.

Oil of Vitriol Concentrated commercial sulfuric acid, abbreviated OV or O.V.

Open Circuit The state of a battery when not connected to either a charging source or a load circuit.

Open Circuit Voltage The voltage at a battery terminal when no appreciable current is flowing.

Oxide (of lead) A compound of lead and oxygen in one of several proportions used to prepare battery paste.

Panel A casting consisting of two or more grids made simultaneously in a single mold.

Pb Chemical symbol for lead.

PbO Chemical symbol for litharge.

PbO_2 Chemical symbol for lead peroxide.

Pellet The portion of pasted material contained in a grid section framed by adjacent horizontal and vertical members exclusive of forming bars.

Peroxide See **Lead Peroxide**.

Pig A cast bar of lead or lead alloy.

Pig Lead A grade of highly refined, unalloyed lead.

Plate A pasted grid.

Plate Centers Distance between center lines of adjoining plates of opposite polarity in a cell. One half the size of a strap center upon which the plates of like polarity are burned.

Polarization Change in voltage at terminals when a specified current is flowing; equal to the difference between the actual and the equilibrium (constant open circuit condition) potentials of the plates, exclusive of the internal resistance drop.

Porosity The ratio of open spaces or voids in a material to the volume of its mass.

Positive Plates The grid and active materials of a storage battery from which current flows to the external circuit when the battery is discharging.

Positive Terminal The terminal that current flows toward in the external circuit from the negative terminal.

Post Terminal or other conductor that connects the plate group strap to the outside of the cell.

Pure Lead Pig Lead.

Rated Capacity Ampere hours of discharge that can be removed from a fully charged cell or battery, at a specific constant discharge rate at a specified temperature and at a specified cut-off voltage.

Rate of Charge See **Starting Rate** and **Finishing Rate.**

Raw Plate An unformed plate.

Rectifier A device that converts alternating (ac) current into unidirectional (dc) current because of a characteristic that permits appreciable flow of current in only one direction.

Red Lead A red oxide of lead used in making active material.

Reference Electrode Electrode used to measure acid concentration or plate state of charge.

Resistance The opposition of a conductor to the passage of an electrical current, usually expressed in ohms.

Resistor A device used to introduce resistance into an electrical circuit.

Retainer A sheet of glass mat, perforated or slotted rubber, plastic or some other material installed on each face of the positive plates in certain types of cells, to deter loss of active material.

Reversal A change in the normal polarity of a cell or battery.

Rib A vertical or nearly vertical ridge of a grooved separator or spacer.

Secondary Lead Reclaimed as opposed to virgin lead.

Sediment The sludge or active material shed from plates that drops to the bottom of cells.

Sediment Space The portion of a container beneath the element; sediment from the wearing of the plates collects here without short-circuiting.

Self-discharge Loss of charge due to local action.

Separator A device in a storage battery that prevents metallic contact between plates of opposite polarity in a cell.

Series Cells All cells in a battery other than pilot cells. They are so called because the cells are usually connected in series.

Series Parallel Connection Cells arranged in a battery so two or more strings of series connected cells, each containing the same number of cells, are connected in parallel; this increases battery capacity.

Short Circuit Current The current that flows when the two terminals of a cell or battery are inadvertently connected to each other.

Side Terminal SLI battery design with two through-the-container current connections on one side instead of two posts on top.

SLI Battery A battery for automotive use in starting, lighting and ignition.

Sliver, Slyver Extremely fine parallel glass fibers used in retainers next to positive plates to retard shedding.

Smelting The primary process for recovering lead and antimony from scrapped batteries and scrap from battery manufacture.

Soaking A manufacturing process following pasting that soaks certain types of lead plates in sulfuric acid. This provides a protective surface and also sulfate helpful in container and tank formation.

Soda Ash Sodium Carbonate (Na_2CO_3) used in neutralizing sulfuric acid in spills or effluents.

Spalling Shedding of active material, usually from positives, during formation due to incomplete or improper plate curing.

Sponge Lead (Pb) A porous mass of lead crystals and the chief material of a full-charged negative plate.

Stacking A cell assembly operation, alternately piling plates and separators in a burning box prior to attachment of straps and posts.

Standard Battery Any of Conventional, YuMicron or YuMicron CX batteries consisting of flooded electrolyte and cell accessible construction.

Standing Loss Loss of charge by an idle cell or battery, resulting from local action.

Starting Rate A beginning charging rate that does not produce gassing or temperatures in excess of 110°F.

State of Charge The amount of electrochemical energy left in a cell or battery.

Strap Precast or cast-on piece of lead or lead alloy used to connect plates into groups and to connect groups to the post.

Strap Center Spacing between centers of adjacent plates in a group.

Stratification Layering of high specific gravity electrolyte in lower portions of a cell, where it does not circulate normally and is of no use.

Sulfated A plate or cell whose active materials contain an appreciable amount of lead sulfate.

Sulfation Formation of lead sulfate on a plate or cell as a result of discharge, self-discharge or pickling.

Sulfuric Acid (H_2SO_4) The principal acid compound of sulfur, sulfuric acid in dilute and highly pure form is the electrolyte of lead acid storage cells.

Tack Burn A shallow burn used to tack together two lead parts.

Tank Formation Electrolytic processing of plates prior to assembly in large tanks of acid.

Temperature Correction In storage cells, specific gravity and charging voltage vary inversely with temperature, while the open circuit voltage varies directly though slightly with temperature.

Terminals The points on a battery to which the external circuit is connected.

Terminal Cable A length of insulated cable, one end connected to the battery terminal post, and the other fitted with a plug, receptacle, lug or other device for connection to an external circuit.

Top Pour A method of casting in which molten metal is poured, usually by hand, into a top gated mold.

Treeing Growth of a lead dendrite or filament through a crack or hole of a separator, short-circuiting the cell.

Trickle Charge A low-rate continuous charge approximately equal to a battery's internal losses and capable of maintaining the battery in a fully-charged state.

TVR A temperature compensating voltage relay used in charging equipment.

Unformed A plate that has not been electrolytically formed.

Useful Acid The acid above the lower edges of the plates that takes part in the discharge reactions that occur within a cell.

Vent An opening that permits the escape of gas from a cell or mold.

Vent Plug The seal for the vent and filling well of a cell cover, containing a small hole for escape of gas.

Vent Well The hole or holes in a cell cover that allow fluids to be checked, electrolyte to be added, and gas to escape. The vent plug fits into the vent well.

Verticals The members in a plate grid.

Volt The unit of measurement of electromotive force, being the force needed to send a current or one ampere through a conductor with a resistance of one ohm.

Volt Efficiency The ratio of the average voltage of a cell or battery during discharge to the average voltage during subsequent recharge.

Voltage The difference in electrical potential that exists between the terminals of a cell or battery or any two points of an electrical circuit.

Voltage Range The difference between maximum and minimum cell voltages within a battery or string of cells when all cells are charging and discharging.

Voltmeter An instrument for measuring voltage.

VRLA (Valve Regulated Lead Acid) Sealed batteries which feature a safety valve venting system designed to release excessive internal pressure, while maintaining sufficient pressure for recombination of oxygen and hydrogen into water.

Watering Adding water to battery electrolyte to replace loss from electrolysis and evaporation.

Watt A unit of electric power, equal to a current of one ampere under one volt of pressure.

Watthour A unit of electrical energy or work, equal to one watt acting for one hour.

Watthour Capacity The number of watthours a storage battery can deliver under specific conditions of temperature, rate of discharge and final voltage.

Watthour Efficiency A storage battery's energy efficiency expressed as ratio of watthour output to the watthours of the recharge.

Watthour Meter An electric motor that measures and registers electrical energy in watthours.

Wet Shelf Life The time a wet secondary cell can be stored before its capacity falls to the point that the cell cannot be easily recharged.

YUASA® BATTERY ACCESSORIES

Jumper Cables

Part No. YUA00ACC07

- Easy to use, easy to store
- Convenient storage bag
- Heavy duty, 8 ft., 8-gauge cables won't stiffen or freeze
- Tangle resistant, encased rubber grips for safer use

Battery Tester

Part No. YUA00BTY01

- Developed exclusively for the Powersports industry
- Determines accurate battery status in seconds
- Single load, dynamic resistance technology minimizes battery drain during test
- Tests both charged and dis charged batteries accurately
- 1 year limited warranty

Digital Multimeter

Part No. YUA00ACC05

- Simple to use
- Easy and accurately measures current,voltage and resistance
- Eliminates the guesswork when your battery needs recharging
- A must for checking maintenance free batteries as well as conventional batteries
- 90 day limited warranty

Part No. YUA00ACC02

Part No. YUA00ACC04

Battery Accessory Lead and Fused Ring Connectors

- Simple, quick connection
- Can be used with Yuasa's 1.5 Amp and 900 mA chargers for applications ranging from motorcycles, automobiles and personal watercraft to ATVs, snowmobiles and riding mowers

Syringe Hydrometer

Part No. YUAMHYDRO

- Shows exact specific gravity reading on conventional battery's condition

Battery Analyzer

Part No. YUA00ACC06

- Easy installation
- Shows battery condition at the push of a button
- Offers the confidence of knowing when your battery is fully charged

YUASA

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FORM NO. YUA-069 (Rev. 4/04) PG – 10,000 PRINTED IN U.S.A.

T12-02-

YUASA brutto prisliste
09/2006

Yuasa batteri	Udsalg med moms
B38-6A	255,-
B39-6	235,-
B49-6	370,-
B54-6 = 6N12A	230,-
6N2A-2C-3	130,-
6N4-2A-4	110,-
6N4A-4D	150,-
6N4B-2A	135,-
6N6-1D-2	150,-
6N6-3B-1	145,-
6N11A-1B (MZ)	225,-
12N5,5-3B	200,-
12N5,5A-3B	285,-
12N7B-3A	280,-
12N9-3B	280,-
12N11-3A-1	445,-

Yuasa DIN batteri	Udsalg med moms
51814	560,-
51913	560,-
53030 (Y60N24)	765,-

Batterisyre beholder til vedligeholdelsfrie batterier.

Bestillings nummer	Batteri model	Brutto pris.
T12-02-ACYT4B	YT4B-BS	**115,00**
T12-02-ACYT4L	YT4L-BS	**60,00**
T12-02-ACYTR4A	YTR4A-BS	**75,00**
T12-02-ACYTX5L	YTX5L-BS	**65,00**
T12-02-ACYTX7A	YTX7A-BS	**90,00**
T12-02-ACYTX7L	YTX7L-BS	**85,00**
T02-02-ACYTX9	YTX9-BS	**90,00**
T12-02-ACYT12A	YT12A-BS	**115,00**
T12-02-ACYTX12	YTX12-BS	**105,00**
T12-02-ACYTX14	YTX14-BS	**105,00**
T12-02-ACYTX16	YTX16-BS/BS1	**172,00**
T12-02-ACYTX20	YTX20L	**185,00**

T12-02-

YUASA brutto prisliste
09/2006

YUASA

YB & SYB batteri	Udsalg med moms
YB3L-A	140,-
YB3L-B	160,-
YB4L-A	390,-
YB4L-B	105,-
YB5L-B	165,-
YB7-A	235,-
YB7L-B	235,-
YB9-B	215,-
YB9L-A2	590,-
YB9L-B	215,-
YB10A-A2	295,-
YB10L-A2	290,-
YB10L-B / B2	290,-
YB12A-A	290,-
YB12A-B	295,-
YB12AL-A2	295,-
YB12B-B2	475,-
YB14-A2	300,-
YB14A-A2	315,-
YB14L-A2	300,-
YB14L-B2	300,-
YB16-B	700,-
YB16AL-A2	615,-
YB16B-A	680,-
YB16CL-B J/S	750,-
YB16L-B	700,-
YB18L-A	650,-
Y60-N24AL-B	765,-
Y50-N18L-A	715,-
SYB14L-A2	315,-
SYB16L-B	795,-
SY50-N18L-A	735,-

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YUASA brutto prisliste
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YT & YTX batteri	Udsalg med moms
YTR4A-BS	565,-
YT4B-BS	825,-
YT4L-BS	285,-
YTX5L-BS	485,-
YTX7A-BS	605,-
YTX7L-BS	515,-
YTX9-BS	460,-
YHD-12 H.D.	745,-
YT9B-4	1.250,-
YT12A-BS	800,-
YT12B-BS	800,-
YTX12-BS	665,-
YTX14-BS	715,-
YT14B-4	1.360,-
HYB16A-A	735,-
YTX16-BS (K)	785,-
YTX16-BS1 (S)	785,-
YTX-20	880,-
YTX20HL-BS-PW	1.120,-
YTX20L-BS	880,-

YTZ Yuasa batteri	Udsalg med moms
YTZ7-S	810,-
YTZ10-S	1.075,-
YTZ12-S	1.105,-
YTZ14-S	1.135,-

T12-02-

YTZ batterier fra YUASA

Den næste generation af YT og YTX batterier.

YUASA har udviklet et batteri, som er mere kompakt og med større start strøm (CCA) end de nuværende YT og YTX batterier.
Op til 82% bedre.
YTZ batterierne selv-aflader næsten ikke ved længere tids opbevaring, og levetiden er væsentlig længere, end normale batterier.

Honda er den første motorcykel fabrikant som bruger denne nye type, men YTZ bliver med sikkerhed fremtidens motorcykel batteri. Se i skemaet sammenligningerne med YTX batterierne.

Type	Leveres	Størrelse	Vægt	Amp.timer 10HR(AH)	CCA(A) startstrøm	STØRRE EFFEKT
YTZ7-S	Påfyldt	113x70x105	2,1kg	6h	130	82%
YTX7L-BS	Tør	113x70x130	2,5kg	6h	85	
YTZ10-S	Påfyldt	150x87x93	3,2kg	8,6h	190	43%
YTX9-BS	Tør	150x87x105	2,9kg	8h	120	
YTZ12-S	Påfyldt	150x87x110	3,7kg	11h	210	32%
YTX12-BS	Tør	150x87x130	4,2kg	10h	180	
YTZ14-S	Påfyldt	150x87x110	3,9kg	11,2h	230	36%
YTX14-BS	Tør	150x87x145	4,6kg	12,0h	200	